

A Survey of the European Species of *Apanteles* Först. (Hymenoptera, Braconidae: Microgasterinae) II. The *laevigatus*-group, 1.

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Abstract — A key to the *laevigatus*-group (first part) comprising all West-Palaearctic, and some East-Palaearctic and Nearctic, totalling 71, *Apanteles* species is given. Recent type examinations revealed six new synonyms: *A. appellator* TELENGA, 1949 = *A. salverdensis* HEDQVIST, 1965; *A. breviventris* (RATZBURG, 1848) = *A. mesoxanthus* RUSCHKA, 1917; *A. evonymellae* (BOUCHÉ, 1834) = *A. iarbas* NIXON, 1972; *A. lacteipennis* (CURTIS, 1830) = *A. lissonotus* TOBIAS, 1964; *A. propinquus* PAPP, 1975 = *A. praetorius* TOBIAS, 1976; *A. sicarius* MARSHALL, 1885 = *A. crudelis* PAPP, 1971. Two names, *A. albipennis* (NEES, 1834) and *A. drusilla* NIXON, 1972, are re-established. With 217 figures.

Introduction — In the first part of my survey (PAPP 1976a) I have separated every European species-group of the genus *Apanteles* FÖRST. by constructing a key for them. In the present and subsequent contributions I present my elaboration of the species-groups beginning with the *laevigatus*-group. I consequently endeavoured to include all the species into the key of the respective species-groups of which I could decide to what a species-group they belong. Every species being thus clarified and either described from or distributed also in Europe and North Africa* were comprised in the key of the respective species-group. Furthermore, several species known either from the East Palaearctic Region or from the Nearctic Region were also incorporated, of course, this elaboration is far from being complete owing to my restricted knowledge of the *Apanteles* species distributed in these regions.

Notations — 1. (!) = known to me through authentically identified specimen(s) only, viz., many West Palaearctic species determined by G. E. J. NIXON, V. I. TOBIAS, and D. S. WILKINSON, few East Palaearctic species by C. WATANABE, and some Nearctic species by P. MARSH and W. R. M. MASON.

2. (!!) = I have studied either the holotype or paratype(s) of the species.

3. Abbreviations of the alar veins and cells see in the first part of my survey (PAPP 1976a).

4. [...] = the species is not a representative of the species-group in respect.

The *LAEVIGATUS*-group

The following features characterize the species-group of *laevigatus*-group: 1. First tergite usually parallel- or subparallel-sided, rather exceptionally either with arched, or distally widening or narrowing sides; 2. Second tergite transverse, distinctly shorter than third one; 3. Tergites 1–2 usually rugulose-subrugulose, or smooth to polished, with more or less punctation; 4. Ovipositor sheath** long, usually about length of third tibia; 5. Vannal lobe of hind wing convex; 6. Propodeum never with areola, though an areola-like impression as a U with shortened pair of carinae or rugae present in several species; 7. Mesonotum punctate in variable density and strength, however, punctation only exceptionally confluent giving an impression of rugose surface.

Hosts of the species of *laevigatus*-group cover the following lepidopterous families: Cochylidae, Coleophoridae, Gelechiidae, Pterophoridae, Tortricidae.

* I use "Europe" and "North Africa" in a geographical sense.

** "Ovipositor sheath" means always the hairy part of the sheath (NIXON 1965, 1972).

KEY TO THE SPECIES OF *LAEVIGATUS*-GROUP, 1.

Females

(After NIXON 1972, considerably modified)

- 1 (2) First tergite (Fig. 35) virtually hardly widening posteriorly, together with second tergite less sculptured, shiny. Propodeum rather subrugose. Mesonotum shiny with superficial and dense punctation. Hypopygium evenly sclerotized without any lateral creases. Ovipositor sheath short, about length of second joint of hind tarsus. ♀♂: 2.5–3.5 mm. An aberrant species of *glomeratus*-group. — Bulgaria; USSR: European part, Azerbaidzhan, Armenia, Soviet Middle Asia; Mongolia [A. **kazak** TELENGA, 1949 (!)]
- 2 (1) First tergite other in shape, either with arched sides (few species, Figs. 39, 43, 53), or with posteriorly widening sides (few species, Figs. 44, 47, 49, 53, 60), or with posteriorly rather converging sides (few species, Figs. 96, 106, 146), or with parallel-subparallel sides (majority of species, Figs. e.g. 71, 83, 100, 117, 120, 125, 133, 152, 158, 163, 185, 194, 201, 202, 214). Ovipositor sheath longer than second joint of hind tarsus, usually about length of hind tibia. Propodeum smooth to even, around lunule frequently with rugae, in exceptional cases* entirely rugose.
- 3 (12) First tergite with arched sides, i.e. narrowing both anteriorly and posteriorly (Figs. 39, 43, 53).
- 4 (5) Stigma brown or dark brown with a vivid yellow basal spot. Sides of first tergite more or less arched, however, distinctly widening posteriorly (Figs. 29, 53). Antennal joints 17–14 transverse to cubic. Further details see at couplet 25 (24) A. **sophiae** PAPP
- 5 (4) Stigma evenly dark. First tergite at most indistinctly widening posteriorly. At most penultimate joint cubic.
- 6 (7) Both propodeum and hind (or horizontal) half of first tergite medially with a trough. Edge of vannal lobe rather less straight. Species of *ater*-group in Nearctic Region [A. **aristoteliae** VIERECK, 1912 (!)]
- 7 (6) Propodeum and first tergite without any trough. Edge of vannal lobe distinctly convex.
- 8 (9) Propodeum relatively short, on its posterior half to third rugose, otherwise smooth to uneven (Fig. 38). Body rather stout. First tergite (Fig. 39) subquadrate, at most 1.3 times longer than its greatest width. Head behind eyes more constricted (Fig. 36). Ovipositor sheath three-quarters as long as hind tibia. Hypopygium tightly infolded along medio-longitudinal line, laterally heavily sclerotized (an aberrant character in *laevigatus*-group), i.e. without any creases. Hind half of first tergite weakly rugose to rugulose, second tergite with weaker sculpture, third tergite 1.3–1.4 times longer than second one. Two preapical joints of antenna one-and-a-third times longer than wide (9 : 7, 8 : 6, ×100). Inner spur of hind tibia almost as long as half basitarsus, and only somewhat longer than outer one. Mesonotum with distinct and rather shallow punctation, shiny. Scutellum almost smooth. Stigma relatively broad, only twice longer than broad, r1 shorter than breadth of stigma (Fig. 37). Spines on hind rim of third tibia rather long and sharply pointed. Wings faintly brownish. Apex of first femur and entire first tibia reddish yellow, second and third tibia dull reddish yellow but gradually becoming infuscate distally. ♀: 3.5 mm.

* *A. agilla* NIXON, *A. artissimus* PAPP, *A. imperator* WILK., *A. scaber* TOB.

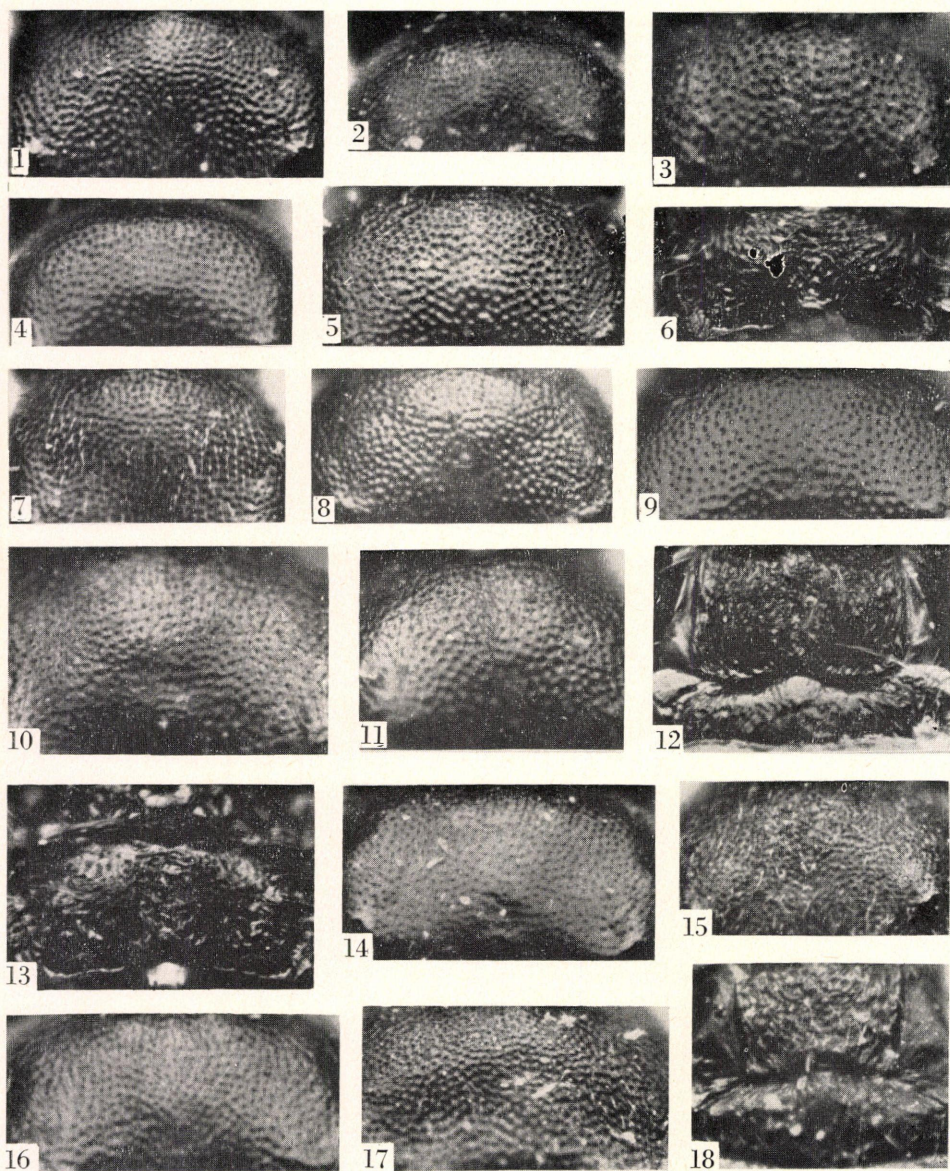
A somewhat aberrant species by its heavily sclerotized hypopygium, rugose propodeum, and shape of first tergite. — Finland, Mongolia*

A. agilla NIXON, 1972 (!!)

- 9 (8) Propodeum normal in length, not short, on its posterior half smooth to some radiating rugulae around lunule, or at most more or less uneven. Body rather gracile. First tergite (Fig. 43) at least 1.3–1.4 times longer than wide at hind. Head behind eyes rounded (Fig. 40).
- 10 (11) Penultimate 2–3 joints of antenna cubic to subcubic, and rather exceptionally 1.2 times longer than broad. Hind two spurs of third tibia equal in length with each other, or inner one slightly longer than outer one, inner spur distinctly shorter than half basitarsus. Outer surface of third tibia on its upper part with dense spines (Fig. 42). Lateral margin of first tergite distinctly (but not strongly) arched, 1.5 times as long as its greatest width (Fig. 43). Hypopygium laterally uncreased, i.e. strongly sclerotized, truncate far before end of abdomen. Ovipositor sheath somewhat longer than half of hind tibia. Metacarp one-fifth longer than stigma, ending somewhat far from apex of *R* (Fig. 41). Distal end of femora and tibiae more or less fully yellowish brown to brown. ♀♂: 2.5–2.8 mm. — Hungary; further distributional records (SHENEFELT 1972) recommended to be strengthened
- 11 (10) Penultimate 2–3 joints of antenna 1.6 times longer than broad. Inner spur of third tibia distinctly longer than outer one, and as long as half basitarsus. Outer surface of third tibia with scattered spines. Lateral margin of first tergite less distinctly arched, 1.6 times as long as wide at hind. Hypopygium laterally creased and its apex slightly exceeding end of abdomen. Ovipositor sheath as long as third tibia. Metacarp about one-sixth longer than stigma, reaching near to apex of *R*. Legs rather darker than in previous species. ♀: 2–2.5 mm, ♂: 2–2.3 mm. — Nearctic Region
- 12 (3) First tergite either with posteriorly widening side (few species, Figs. 44, 47, 49, 53, 60), or with posteriorly rather converging sides (few species, Figs. 96, 106, 146), or with parallel-subparallel sides (majority of species, Figs. see at couplet 2).
- 13 (32) First tergite posteriorly with faintly or distinctly widening sides (Figs. 44, 47, 49, 53, 60).
- 14 (15) Tergites 1–3 rugose, rugosity of tergites 2–3 hardly weaker than that of tergite 1, tergites 2–3 equal in length. Antennal joints 17–16th rather transverse, 15–14th joints cubic. Face 1.3 times wider than high, weakly punctated, dull. Metacarp slightly longer than stigma, *cuq*₁ almost equal in length with *r*₁ and meeting each other angularly. Inner spur of hind tibia shorter than half basitarsus. Ovipositor sheath somewhat longer than hind tibia, slightly down-curved and broadening. Tegulae yellow. Legs, sternites and hind margin of tergites brownish yellow. Stigma yellowish brown, with a faint basal light spot. ♀: 3 mm. An aberrant species in *laevigatus*-group, considering its rugose tergites 1–3 and equal length of tergites 2–3. — USSR: Far East Maritime Territory
- A. scaber** TOBIAS, 1976b (!!)

* The single Mongolian female has a less rugose propodeum (PAPP 1976b).

** My interpretation of *A. impurus* (NEES) is based on two males named by T. A. MARSHALL and deposited in the Hungarian Natural History Museum, Budapest. Through DR. P. DESSART's courtesy (Institut Royal des Sciences Naturelles, Bruxelles) I studied three females of *A. impurus* named by C. WESMAEL and, furthermore, through DR. E. KÖNIGSMANN's courtesy (Zoologisches Museum, Berlin) one female and one male specimens of *A. impurus* named by H. REINHARD. My examination resulted to rectify both WESMAEL's and REINHARD's identification, namely, *A. impurus* (NEES) sensu WESMAEL proved to be representatives of *A. infimus* (HAL.) (2 ♀) and *A. cinerosus* PAPP (1 ♀), and *A. impurus* (NEES) sensu REINHARD are representatives of *A. sicarius* MARSH. I labelled the respective specimens accordingly.

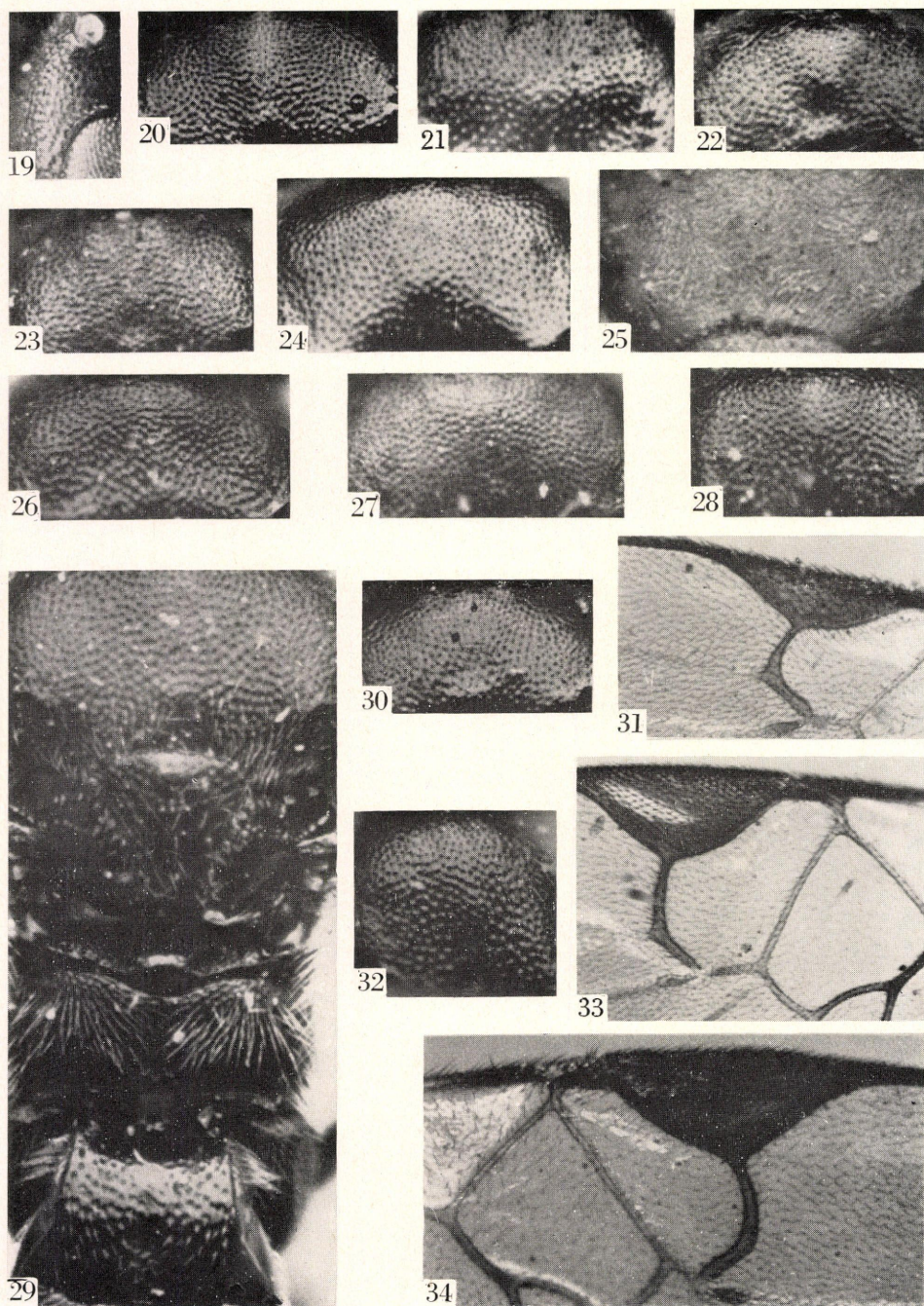


Figs. 1-18. — Figs. 1-5. Mesonotum of 1 = *Apanteles albipennis* (NEES), 2 = *A. appellator* TEL., 3 = *A. artissimus* PAPP, 4 = *A. breviventris* (RATZ.), 5 = *A. cheles* NIXON. — Fig. 6. *A. cheles* NIXON: propodeum. — Figs. 7-11. Mesonotum of 7 = *A. californicus* MUES., 8 = *A. dilectus* (HAL.), 9 = *A. drusilla* NIXON, 10 = *A. faucula* NIXON, 11 = *A. immissus* PAPP. — Figs. 12-14. *A. imperator* WILK.: 12 = hind half of first tergite and entire second tergite, 13 = propodeum, 14 = mesonotum. — Figs. 15-17. Mesonotum of 15 = *A. litae* NIXON, 16 = *A. laevigatus* (RATZ.), 17 = *A. phaloniae* WILK. — Fig. 18. *A. luctificus* PAPP: hind half of first tergite and entire second tergite. — (The photographs were taken with a Tessovar Opton apparatus in the Zoological Institute of the József Attila University at Szeged, Head Prof. DR. L. MÓCZÁR)

- 15 (14) Third tergite smooth except *A. artissimus* PAPP with weak rugulosity (Fig. 44), see couplet 17 (18), tergite 2 or tergite 3 at most rugulose and always with weaker sculpture than first tergite. Second tergite distinctly shorter than third one.
- 16 (21) *D1* distinctly, usually about one-third times, longer than high (Figs. 45, 52).
- 17 (18) Propodeum quite strongly rugose all over, first tergite slightly less strongly rugose, second tergite rugulose, third tergite superficially rugulose to uneven (Fig. 44), every tergites together with mesonotum pruinose. Mesonotum with distinct, relatively large, and more or less concentric punctation, interspaces shorter than punctures and with microsculpture (Fig. 3). Metanotum behind angularly produced at middle into propodeum, similar to that of *A. imperator* WILK., see couplet 28 (29). Body somewhat elongated. Penultimate two joints of antenna 1.6–1.8 times as long as broad. Metacarp somewhat longer than stigma (30 : 35–37, $\times 63$), ending rather far before apex of *R*; *r1* issuing distally from stigma, latter 2.5 times longer than wide (Fig. 45). Hypopygium truncate far before end of abdomen, uncreased. Ovipositor sheath short, as long as third basitarsus (in lateral view). Legs dark, only tibiae and tarsi more or less yellow to brown. Stigma opaque brown without any basal light spot. ♀♂: 2.8–3 mm. — Mongolia, Europe (England, Sweden, Finland, Germany, Hungary). (= *abila* Nixon, 1972, !!) ***A. artissimus* PAPP, 1971 (!)***
- 18 (17) Propodeum, first and second tergites usually smooth to uneven, at least with rugosities around lunule, shiny to subshiny. Mesonotum with fine and small punctation, rather shiny. Postscutellum not produced angularly except in *A. imperator* WILK., see couplet 28 (29).
- 19 (20) Legs except coxae reddish yellow. Coxae 1–2 brownish black, coxa 3 black. Femora 2–3 basally more or less darkening. Body rather stout or strong, less pruinose. Propodeum rugose around lunule. Ovipositor sheath more expanded apically (Fig. 46). First tergite as long as wide at rear, second tergite more transverse (Fig. 47). ♀ : 2.8–3 mm. — Hungary ***A. mimi* PAPP 1974 (!)**
- 20 (19) Legs black. Apex of fore femur, entire tibia, base of middle and hind tibiae yellow or fumous yellow. Hind femur exceptionally reddish yellow with blackish pattern at its base, see couplet 105 (104). All tarsi fumous. Body rather less stout, gracile, pruinose. Propodeum uneven to smooth, at least with weak rugosity around lunule. Ovipositor sheath less expanded apically (Fig. 48). First tergite slightly longer than wide at hind, second tergite less transverse (Fig. 49). Venation (*st*, *r1* + *cuqul*, *n. bas.*) see on Fig. 31. ♀♂ : 2.5–2.7 mm. — Mongolia, Hungary, Yugoslavia, Belgium** ***A. cinerosus* PAPP, 1971 (!)**
- 21 (16) *D1* at most somewhat longer than high (Figs. 33, 59, 137).
- 22 (27) Stigma brown with a pale basal spot (Figs. 55, 81, 137).
- 23 (26) Metacarp much longer than stigma and reaching near to apex of *R* (Figs. 55, 137).
- 24 (25) Legs bright reddish yellow to yellow. Body shiny. First tergite rather indistinctly widening behind or subparallel-sided (Fig. 133). Penultimate joint of antenna at least one-and-a-third times longer than broad. Mesonotum with discrete

* A very deceptive species considering its uncreased hypopygium, rugose propodeum and first tergite; this feature may relegate it to the *glomeratus*-group, however, the habitus of its body, the distinctly short second tergite (tergites 2 : 3 as 10 : 16–18), and the length of ovipositor sheath are strong characters of the *laevigatus*-group.

** Among the three females of *A. impurus* (NEES) in Wesmael's Collection one female proved to represent my *A. cinerosus*, further comments see in the footnote to *A. impurus* on p. 267.



Figs. 19-34. — Fig. 19. *Apanteles litae* NIXON: vertex. — Figs. 20-28. Mesonotum of 20 = *A. marica* NIXON, 21 = *A. midas* NIXON, 22 = *A. nixosiris* PAPP, 23 = *A. luctificus* PAPP, 24 = *A. probatus* PAPP, 25 = *A. pulcher* TEL., 26 = *A. reicharti* PAPP, 27 = *A. sicarius* MARSH., 28 = *A. soikai* NIXON. — Fig. 29. *A. sophiae* PAPP: thorax dorsally and first tergite. — Fig. 30. *A. turionellae* NIXON: mesonotum. — Fig. 31. *A. cinerosus* PAPP: part of fore wing (*st, r1+cuq1, n. bas.*). — Fig. 32. *A. victor* WILK.: mesonotum. — Figs. 33-34. Part of fore wing (*st, r1+cuq1, D1*): 33 = *A. imperator* WILK., 34 = *A. sicarius* MARSH. — (The photographs were taken with a Tessovar Opton apparatus in the Zoological Institute of the József Attila University at Szeged, Head Prof. DR. L. MÓCZÁR)

punctuation, interspaces rather equalling with diameter of punctures (Fig. 16). Hypopygium pointed though not produced into a spinule, ovipositor sheath as long as hind tibia and basitarsus (cf. Fig. 129). Hind imaginary tangent to anterior ocellus at most touching posterior pairs. Further details see at couplet 115 (116).

A. laevigatus (RATZ.)

- 25 (24) Hind leg mostly black, first and second legs yellow with black or blackish patterns. Body dull. First tergite distinctly widening behind, its sides rather arched (Figs. 29, 53). Antennal joints 14–17 cubic to transverse. Mesonotum closely and rather strongly punctated, interspaces shorter than diameter of punctures (Fig. 29). Hypopygium produced into a spinule, ovipositor sheath about length of third basitarsus (Fig. 54). Hind imaginary tangent to anterior ocellus transecting posterior pair. Stigma 2.3–2.5 (–2.8) times longer than wide, *r*₁ issuing from its middle or hardly distally, *r*₁ somewhat longer than *cu*₁ and forming a rather normal angle at their junction (Fig. 55). Upper (or fore) half of propodeum subpunctato-subrugulose, postero-lateral field polished, above lunule with two short, hardly visible costulae including a slightly impressed dimple. Inner spur of hind tibia half length of basitarsus. Tegulae black. ♀: 2.5–2.8 mm, ♂: 2.5–2.7 mm. — Hungary

A. sophiae PAPP, 1972 (!!)

- 26 (23) Metacarp at most somewhat longer, usually slightly shorter, than stigma and ending far before apex of *R* (Fig. 81). Hind imaginary tangent to anterior ocellus transecting posterior pair. A dull species. Legs black or dark with few light patterns. Further details see at couplet 57 (58).

A. litae NIXON, 1972 (!!)

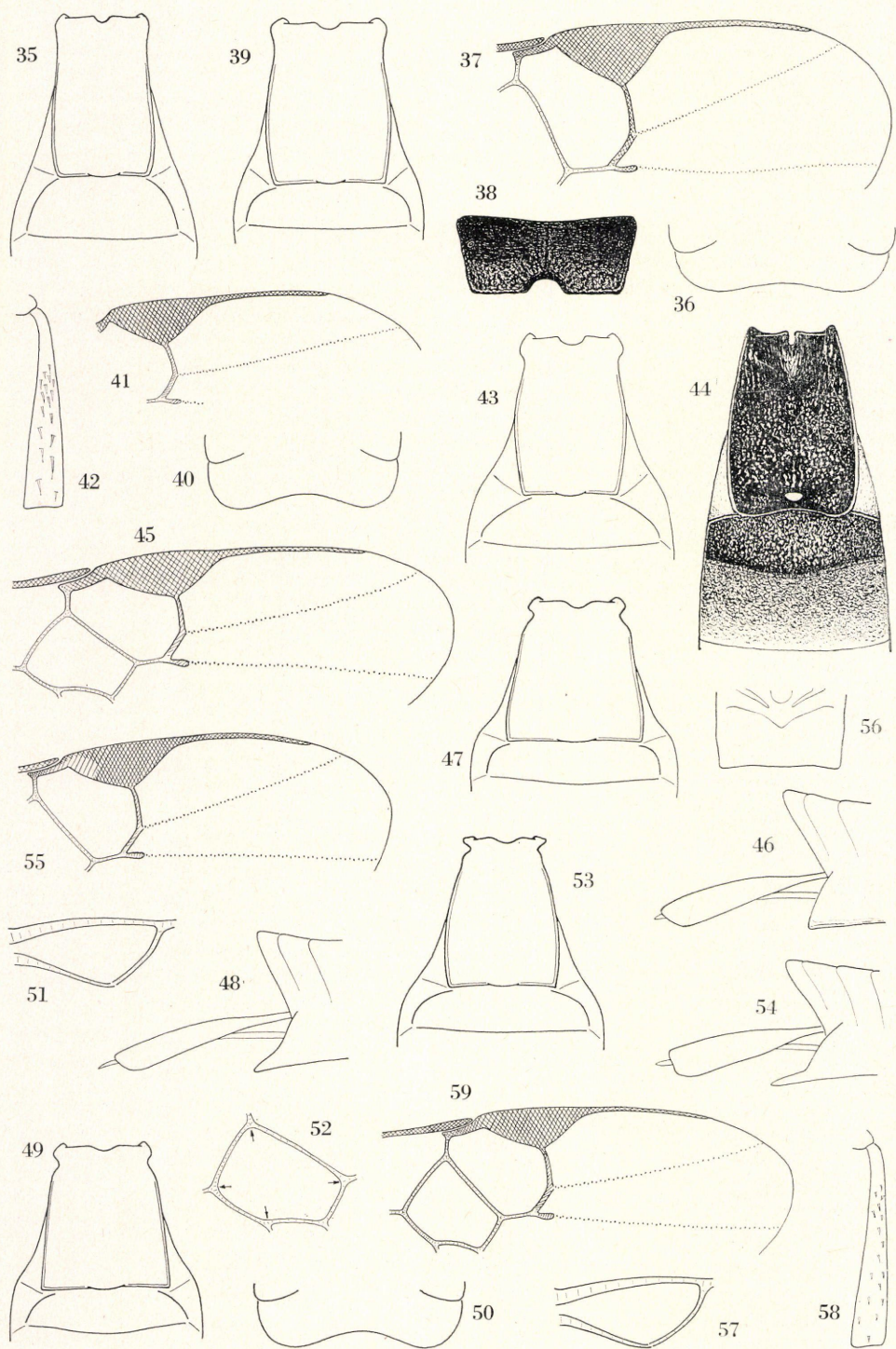
- 27 (22) Stigma evenly brown without any pale basal spot (Figs. 33, 59, 63).
28 (29) Metanotum behind angularly produced at middle into propodeum (Fig. 59). Propodeum more or less rugose in middle (Fig. 13). First tergite rugose (Fig. 12). Mesonotum with weak satine sheen, and with superficial punctuation (Fig. 14). Penultimate two joints of antenna subcubic, at most a quarter longer than broad. Stigma relatively wide, twice, or at most two-and-a-quarter times longer than wide (Fig. 33). Ovipositor sheath two-thirds as long as third tibia. Wings fumous. Third tibia brownish yellow, its apical third black. ♀♂: 2.5–3 mm. — North-western and Central Europe, Sardinia, USSR: European part, Kazakhstan, Soviet Middle Asia, Azerbaïdzhan, Armenia

A. imperator WILKINSON, 1939 (!!)

- 29 (28) Metanotum behind not produced angularly at middle. Propodeum smooth, or at most uneven. First tergite at most rugulose.
30 (31) Nervellus (*n*) of hind wing evenly incurved (Fig. 57). Hind imaginary tangent of anterior ocellus at most touching posterior ocelli, POL less longer than OOL (12: 10–11, ×100). Outer side of hind tibia with numerous spines (Fig. 58). *r*₁ at least slightly longer than width of stigma (Fig. 59), frequently shorter (Fig. 34). Ovipositor sheath as long as hind tibia or slightly shorter. Body relatively strong. ♀: 3–3.5 mm, ♂: 2.7–3.2 mm. Further details see at couplet 91 (92). — Palaearctic Region. (= *crudelis* PAPP, 1971, !, *syn. n.*)

A. sicarius MARSHALL, 1885

- 31 (30) Nervellus (*n*) of hind wing almost straight (Fig. 61). Hind imaginary tangent to anterior ocellus transecting posterior two ocelli, POL distinctly longer than OOL (10: 8, ×100). Outer side of hind tibia with few to very few spines (Fig. 62). *r*₁ shorter, at most as long as, width of stigma (Fig. 63). Ovipositor sheath



distinctly shorter than hind tibia, about as long as third basitarsus. Body relatively gracile. ♀♂: 2.4–2.6 mm. — Germany, Hungary, European USSR

A. seriphia NIXON, 1972 (!!)

- 32 (13) First tergite posteriorly either with rather converging sides (few species, Figs. 96, 106), or with parallel-subparallel sides (majority of species, Figs. see at couplet 2)
- 33 (74) Metacarp short, at most as long as stigma, usually shorter; its distance from apex of *R* at most somewhat shorter than its own length (Figs. 66, 72, 74, 78, 81, 84, 89, 95, 99, 103, 110).
- 34 (49) Stigma evenly bright yellow, at most its margin brown (Figs. 66, 72).
- 35 (36) Stigma proximo-distally yellow to brown, at least its distal third brown (Fig. 78). Further details see at couplet 53 (54)

A. probatus PAPP, 1973 (!!)

- 36 (35) Stigma entirely bright yellow (Figs. 66, 72).
- 37 (40) Mesonotum and scutellum densely coriaceous or rugulose with argenteous pubescence. Head less coriaceous. Second tergite conspicuously transverse and pointed laterally (Fig. 64). *r*1 rather perpedicularly (and not obliquely) joining stigma. Hind half of first tergite narrowing. Two species of the *butalidis*-group, however, deceptively similar to members of the *laevigatus*-group.
- 38 (39) Head behind eyes rather constricted. First tergite relatively broad, 1.3 times longer than wide at base. *D*1 distinctly wider than high (29 : 21, ×100). Tibiae and tarsi rather vivid yellow to reddish yellow. Tegulae yellow. ♀ : 2.3 mm, ♂ : 2–2.3 mm. — Cape Verde Islands

[A. brevimetacarpus HEDQVIST, 1965 (!!)]

- 39 (38) Head behind eyes rather rounded. First tergite relatively less broad, 1.5 times longer than wide at base. *D*1 less distinctly wider than high (30 : 24, ×100). Tibiae and tarsi of less vivid colour, rather fuscous-infumate. Tegulae black. ♀ : 2.5 mm, ♂ : 2–2.5 mm. — Cape Verde Islands

[A. lindbergi HEDQVIST, 1965 (!!)]

- 40 (37) Mesonotum either smooth or punctated but never coriaceous or rugulose. Second tergite not conspicuously transverse and not pointed laterally.
- 41 (44) Maxillary palpus long, longer than height of head, however, cheek short, distinctly shorter than basal width of mandible (Fig. 65 — this feature is a transitional one towards the *longipalpis*-group). All tarsi shortened, not longer than tibiae, respectively; tarsal joints 2–4 of legs 1–2 cubic to subcubic. Thorax between tegulae distinctly broader than width of head. Stigma and veins as in Fig. 66.
- 42 (43) Head and antenna black, thorax and abdomen reddish yellow or testaceous, legs also reddish yellow to yellow. Mesonotum and mesosternum sometimes with dark spots. Ovipositor sheath half as long as abdomen. Mesonotum with

Figs. 35–59. — Fig. 35. *Apanteles kazak* TEL.: tergites 1–2. — Figs. 36–39. *A. agilla* NIXON: 36 = head behind eyes, 37 = distal part of right fore wing, 38 = propodeum, 39 = tergites 1–2. — Figs. 40–43. *A. impurus* (NEES): 40 = head behind eyes, 41 = distal part of right fore wing, 42 = third tibia with spines, 43 = tergites 1–2. — Figs. 44–45. *A. artissimus* PAPP: 44 = tergites 1–3, 45 = distal part of right fore wing. — Figs. 46–47. *A. mimi* PAPP: 46 = end of abdomen with hypopygium and ovipositor sheath, 47 = tergites 1–2. — Figs. 48–52. *A. cinerosus* PAPP: 48 = end of abdomen with hypopygium and ovipositor sheath, 49 = tergites 1–2, 50 = head behind eyes, 51 = nervellus of right hind wing, 52 = *D*1 of fore right wing. — Figs. 53–55. *A. sophiae* PAPP: 53 = tergites 1–2, 54 = end of abdomen with hypopygium and ovipositor sheath, 55 = distal part of right fore wing. — Fig. 56. *A. imperator* WILK.: metanotum and propodeum. — Figs. 57–59. *A. sicarius* MARSH.: 57 = nervellus of right hind wing, 58 = third tibia with spines, 59 = distal part of right fore wing

evenly dense and fine punctation, interspaces rather shorter than diameter of punctures (Fig. 25). First tergite hardly longer than wide at hind, third tergite 2.5 times as long as second one (Fig. 67). ♀♂: 3 mm. — USSR: Kazakhstan

A. pulcher TELENGA, 1955 (!)*

- 43 (42) Body black; palpi and tegulae brownish yellow, legs also black, apex of every femur, entire fore tibia, base of middle and hind tibiae yellow to brownish yellow, all tarsi fumous. Ovipositor sheath hardly shorter than abdomen. Mesonotum with weak and disperse punctation. First tergite one-and-a-half times longer than wide at hind, third tergite twice as long as second one. ♀: 3 mm. — USSR: Tadzhikistan

A. palpator TOBIAS, 1960*

- 44 (41) Maxillary palpus normal in length, shorter than height of head. Tarsi not shortened, at least somewhat longer than tibiae, respectively. Head and thorax nearly of same breadth.
- 45 (46) Head (in dorsal view) transverse, somewhat more than twice as broad as long, behind eyes constricted (Fig. 68); temple (in lateral view) shorter than width (or horizontal diameter) of eye (12:16, ×100). Body shiny to polished. Mesonotum with very fine punctation, shiny. Scutellum polished. Second tergite usually less transverse (Fig. 69). Legs reddish yellow, coxae dark (♀♂, hind femur also dark (♂)). ♀♂: 2.5 mm. — USSR: Turkmenia, Uzbekistan, Armenia; Jordan (= *turkmenicus* TOBIAS, 1967*, syn. n.)

A. turkmenus TELENGA, 1955 (!)

— Second and third femora either entirely dark or with dark patterns

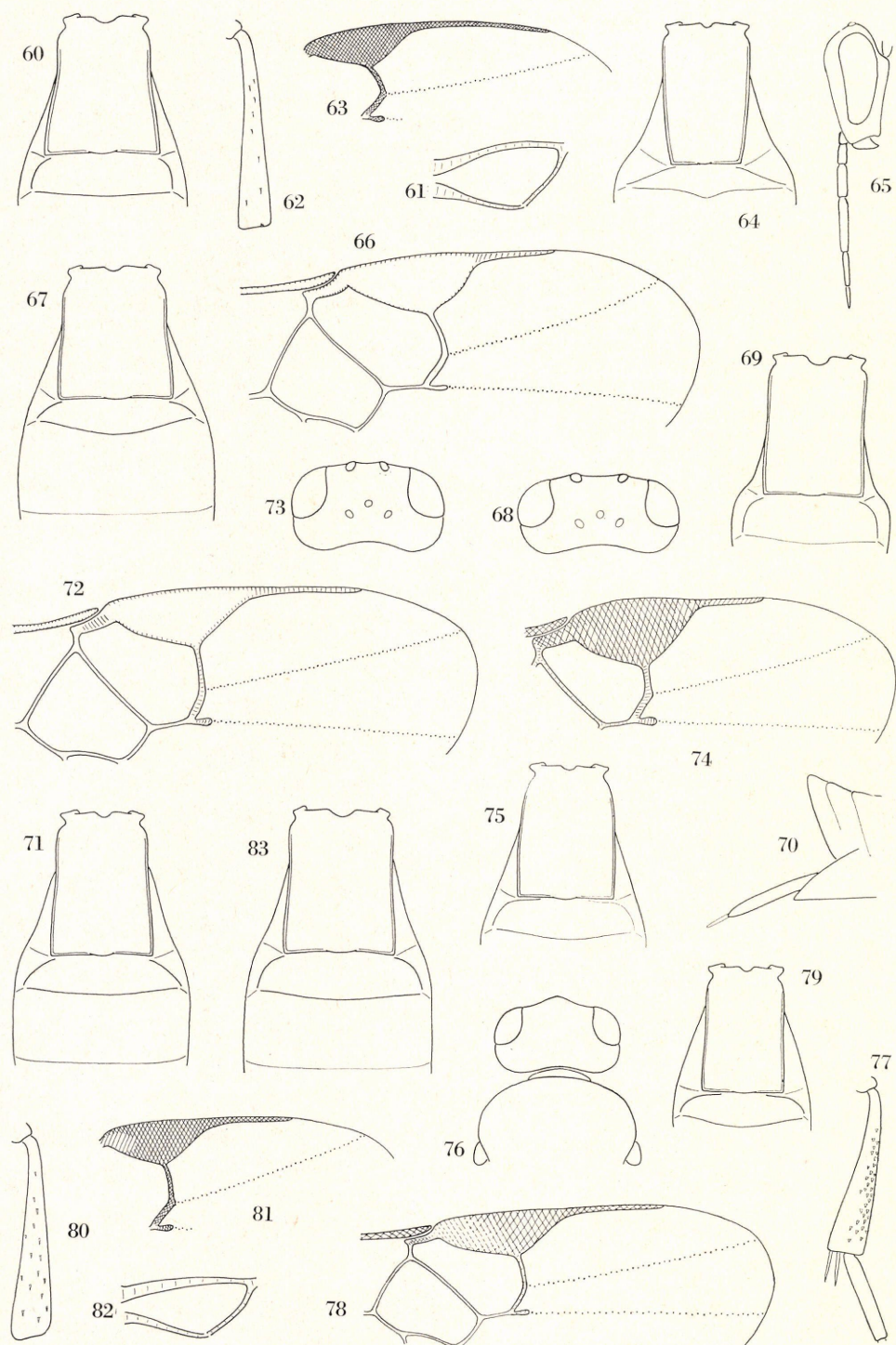
A. turkmenus var. **turkmenicus** (TOBIAS, 1967) (!)**

- 46 (45) Head (in dorsal view) moderately transverse, less than twice as broad as long, rounded behind eyes (Fig. 73); temple (in lateral view) as long as width (or horizontal diameter) of eye. Body rather dull, not polished. Mesonotum with dense punctation, dull (Fig. 2). Scutellum at most shiny. Second tergite usually more transverse (Fig. 71).
- 47 (48) Head, thorax and first tergite brown to dark brown, abdomen yellow or reddish yellow. Legs yellow, coxae dark. First tergite rounded behind, its hind half together with second tergite rugulose. Antennal joints (14–)15–17 cubic, joints 12–14 subcubic, antenna not longer than head and thorax together. Ovipositor sheath (Fig. 70) as long as two-thirds of hind tibia. An aberrant species of

* The two species (*A. palpator* TOB. and *A. pulcher* TEL.) are very near to each other. A revision of them may prove that *palpator* is only a melanic form of *pulcher*.

** *Apanteles turkmenicus* TOBIAS, 1967, Труды Зоол. Инст., 38: 390. The name *turkmenicus* represents but a variety of *turkmenus*, established on the basis of paratypes examination.

Figs. 60–83. — Figs. 60. *Apanteles sicarius* MARSH.: tergites 1–2. — Figs. 61–63. *A. seriphia* NIXON: 61 = nervellus of right hind wing, 62 = third tibia with spines, 63 = distal part of right fore wing. — Fig. 64. *A. brevimetacarpus* HEDQV.: tergites 1–2. — Figs. 65–67. *A. pulcher* TEL.: 65 = head with maxillary palpus, 66 = distal part of right fore wing, 67 = tergites 1–3. — Figs. 68–69. *A. turkmenus* TEL.: 68 = head in dorsal view, 69 = tergites 1–2. — Fig. 70. *A. turkestanicus* TEL.: end of abdomen with hypopygium and ovipositor sheath. — Figs. 71–73. *A. appellator* TEL.: 71 = tergites 1–3, 72 = distal part of right fore wing, 73 = head in dorsal view. — Figs. 74–75. *A. latistigma* PAPP: 74 = distal part of right fore wing, 75 = tergites 1–2. — Figs. 76–79. *A. probatus* PAPP: 76 = head and fore half of thorax in dorsal view, 77 = third tibia with spines, 78 = distal part of right fore wing, 79 = tergites 1–2. — Figs. 80–83. *A. litae* NIXON: 80 = third tibia with spines, 81 = distal part of right fore wing, 82 = nervellus of right hind wing, 83 = tergites 1–3



glomeratus-group considering its relatively long ovipositor sheath. ♀♂: 2.5 mm. — USSR: Uzbekistan

[**A. turkestanicus** TELENGA, 1955 (!)]

- 48 (47) Body black. Legs black with yellowish patterns. First tergite angled behind (Fig. 71), its hind half together with second tergite rather uneven to smooth. Antennal joints 15–17 at least subcubic, usually one-and-a-third to one-and-a-half times longer than broad, antenna at least as long as head, thorax and first tergite combined. Ovipositor sheath as long as hind tibia or slightly longer. ♀♂: 2–3 mm. — USSR: European part, Soviet Middle Asia; North China, Mongolia, Hungary, Cyprus, Egypt, Cape Verde Islands. Supposedly widely distributed in the Palaearctic Region. (= *litae* var. *operculellae* NIXON, 1972, = *salverdensis* HEDQVIST, 1965, **syn. n.***)

A. appellator TELENGA 1949**!

- 49 (34) Stigma opaque brown to blackish brown, either with a basal light spot (Figs. 74, 78, 81, 84, 89) or without one (Figs. 95, 99, 103, 110).
 50 (61) Stigma brown with a basal pale or yellow spot (Figs. 74, 78, 81, 84, 89).
 51 (52) Stigma extremely wide, twice as long as broad, metacarp short, hardly longer than half length of stigma; *r*1 as long as one-third width of stigma, *cuqu*1 and *r*1 equal in length and both veins with a characteristic arrangement (Fig. 74). Penultimate joint of antenna subcubic, one-fifth longer than broad. Face rather subquadrate, its height to lower and upper width as 16:20:24 (in frontal view, $\times 100$), inner margin of eyes converging towards oral part. Mesonotum dull, with dense and shallow punctation. First tergite (Fig. 75) parallel-sided, anteriorly somewhat converging. Inner spur of hind tibia slightly shorter than half basitarsus. Ovipositor sheath slightly longer than half of hind tibia. Stigma brown with faint proximal and distal yellowish spots. Alar veins weakly pigmented. ♀: 1.9 mm. — Mongolia

A. latistigma PAPP, 1977b (!)

- 52 (51) Stigma more than twice as long as broad, metacarp distinctly longer than half length of stigma; *r*1 and *cuqu*1 other in arrangement (Figs. 78, 81, 84, 89).
 53 (54) Head (in superior view) distinctly not so wide as thorax between tegulae (Fig. 76). Outer surface of hind tibia with dense and rather scale-like spines arranged in a narrow strip (Fig. 77). *D*1 distinctly one-fourth times wider than high; stigma proximo-distally yellow, brownish yellow to brown (Fig. 78). Ocelli small, hind imaginary tangent to fore ocellus before (i.e. not touching) hind two ocelli, these latter nearer to eye than to each other (10:14, $\times 100$). Penultimate joint of antenna somewhat longer than broad (7:5, $\times 100$). Disc of mesonotum punctate, interspaces rather equalling diameter of punctures, shiny (Fig. 24). Inner spur of hind tibia shorter than half basitarsus (10:26 $\times 63$), and minutely longer than outer one (Fig. 77). Stigma three times longer

* Through the courtesy of DR. W. HACKMAN (Zoological Institute, Helsinki) I have studied the holotype of *A. salverdensis* HEDQVIST (Comm. Biol., 1965, 28: 14) and compared it with a female of *A. appellator* TEL. authentically named by TELENGA himself, together with further specimens originating from Mongolia and Hungary. As a result of the comparison I could establish that the two names refer to the same species, consequently, *appellator* is the valid name.

** *A. litae* NIXON is very similar to *A. appellator* TEL. The difference between the two species seems very slight (PAPP 1976b):

A. appellator TEL.

1. Stigma entirely yellow (Fig. 72)
2. Ovipositor sheath as long as two-thirds to three-fourths of hind tibia.
3. First tergite 1.3 times longer than wide at rear (Fig. 71).

A. litae NIXON

1. Stigma brown with basal pale spot. (Fig. 81).
2. Ovipositor sheath as long as hind tibia.

3. First tergite 1.2 (–1.3) times longer than wide at rear (Fig. 83).

A. litae var. *operculellae* NIXON, 1972, is a light form of the nominate species considering stigma, alar venation and hind tarsus.

than broad, *r*1 emitting distally from its middle, *r*1 and *cuq*1 equal in length with each other, *d*1 shorter than *d*2 (Fig. 78). Tergite 1 parallel-sided (Fig. 79). Ovipositor sheath short, as long as hind tarsal joints 1–2. Alar venation almost colourless. ♀♂: 3–3.2 mm. — Hungary

A. probatus PAPP, 1973 (!!)

- 54 (53) Head (in superior view) as wide as thorax. Outer surface of hind tibia with rather disperse and sharply pointed spines (Figs. 58, 80). *D*1 at most one-fifth to one-sixth times wider than high; stigma with a distinctly separated basal light spot (Figs. 81, 84, 89).
- 55 (56) Metacarp either slightly shorter than or as long as length of stigma, its basal spot hardly distinct; normally metacarp distinctly longer than length of stigma and latter evenly brown (Fig. 59). Further details see at couplets 30 (31) and 91 (92)

A. sicarius MARSHALL, 1885

- 56 (55) Metacarp distinctly shorter than length of stigma and latter with a distinct basal light spot (Figs. 81, 84, 89).
- 57 (58) Metacarp always longer than its distance from apex of radial cell, usually one-and-a-third times longer than distance above (Fig. 81). Nervellus of hind wing more incurved (Fig. 82). Head above (Fig. 19) and mesonotum dull owing to micro-sculpture of interspaces among shallow and dense punctation (Fig. 15). Ocelli small, distance between fore and a hind ocelli equal with (or slightly greater than) diameter of hind ocellus. Penultimate joint of antenna one-and-a-quarter times longer than broad. Face transverse, dull, its surface with similar sculpture as in that of mesonotum. Middle field behind hardly wider than lower field behind on side of pronotum. Two spurs of hind tibia equal in length, and half as long as (or minutely longer than) basitarsus. First tergite somewhat longer than wide at hind, hind margin of second tergite less sinuate (Fig. 83). Ovipositor sheath about as long as third tibia. Tegulae yellow or yellow with brown basal spot. ♀♂: 2.8–3 mm. — Germany, Hungary, Yugoslavia, Sardinia, Crete, Turkey, Jordan

A. litae NIXON, 1972 (!!)*

- 58 (57) Metacarp always shorter than its distance from apex of radial cell (Figs. 84, 89). Nervellus of hind wing less incurved (Fig. 88). Head above and mesonotum shiny, interspaces without any microsculpture. Ocelli large, distance between fore and a hind ocelli somewhat shorter than diameter of hind ocellus (appreciable under $\times 100$).
- 59 (60) Stigma relatively large, 2.3 times as long as broad, *r*1 emitting distally from its middle and *r*1 only somewhat longer than *cuq*1, *d*2 (slightly) less than twice as long as *d*1 (Fig. 84). First tergite hardly widening behind, rather only a quarter longer than wide at hind, third tergite twice as long as second one (Fig. 85). Middle field behind one-and-a-half times wider than lower field behind on side of pronotum (Fig. 86). Ovipositor sheath shorter than third tibia, straight and relatively wide (Fig. 87). ♀: 4 mm. — Algeria

A. gallicolus (GIRAUD, 1869) (!!)**

- 60 (59) Stigma relatively small, 2.5–2.7 times as long as broad, *r*1 emitting almost from its middle and nearly twice longer than *cuq*1, *d*2 twice as long as *d*1 (Fig. 89). First tergite with subparallel sides, rather a third longer than wide at hind,

* *A. litae* NIXON is very similar to *A. appellator* TEL.; for further remarks see footnote on page 276.

** Since its description known only on the basis of its holotype.

third tergite only 1.7–1.8 times as long as second one (Fig. 90). Middle field behind twice wider than lower field behind on side of pronotum (Fig. 91). Ovipositor sheath and third tibia equal in length, weakly downcurved and relatively narrow (Fig. 92). ♀♂: 3.5–4 mm. — Iran, Kazakhstan, Mongolia

A. iranicus TELENGA, 1955 (!!)

- 61 (50) Stigma evenly brown, i.e. without a light basal spot (Figs. 95, 99, 103, 110).
62 (67) Metacarp only hardly longer than, exceptionally as long as, length of stigma (Figs. 59, 63).

- 63 (66) First tergite before its hind end distinctly, but never strongly, constricted (Figs. 18, 97). Antennal joints 14–17 subcubic.

- 64 (65) Mesonotum with dense punctation, interspaces dull and distinctly shorter than diameter of punctures, along notauli punctures crowded giving an impression of confluent punctation. Hind half of first tergite rugulo-rugose. Second tergite longitudinally rugulose to subrugulose. Spurs of hind tibia unequal, inner spur as long as half basitarsus. ♀: 3 mm, ♂: 2.8 mm. A species of *ater*-group, however, its vannal lobe straight (cf. NIXON 1973). — Nearctic Region

[A. nephopteris (PACKARD, 1864) (!)]

- 65 (64) Mesonotum with very fine punctation, interspaces shiny to subshiny and in average as long as or slightly longer than diameter of punctures, no indication of notaulic course (Fig. 23). Hind half of first tergite subrugulose to rugulose. Second tergite rugulose to uneven. Spurs of hind tibia equal, inner spur shorter than half basitarsus. Further details see in *laevitarsus*-group 2. ♀: 2.5–2.9 mm, ♂: 2.8–2.9 mm. — Mongolia, Hungary, Yugoslavia, Finland. (= *anfirion* NIXON, 1972, !!)

A. luctificus PAPP, 1971 (!!)

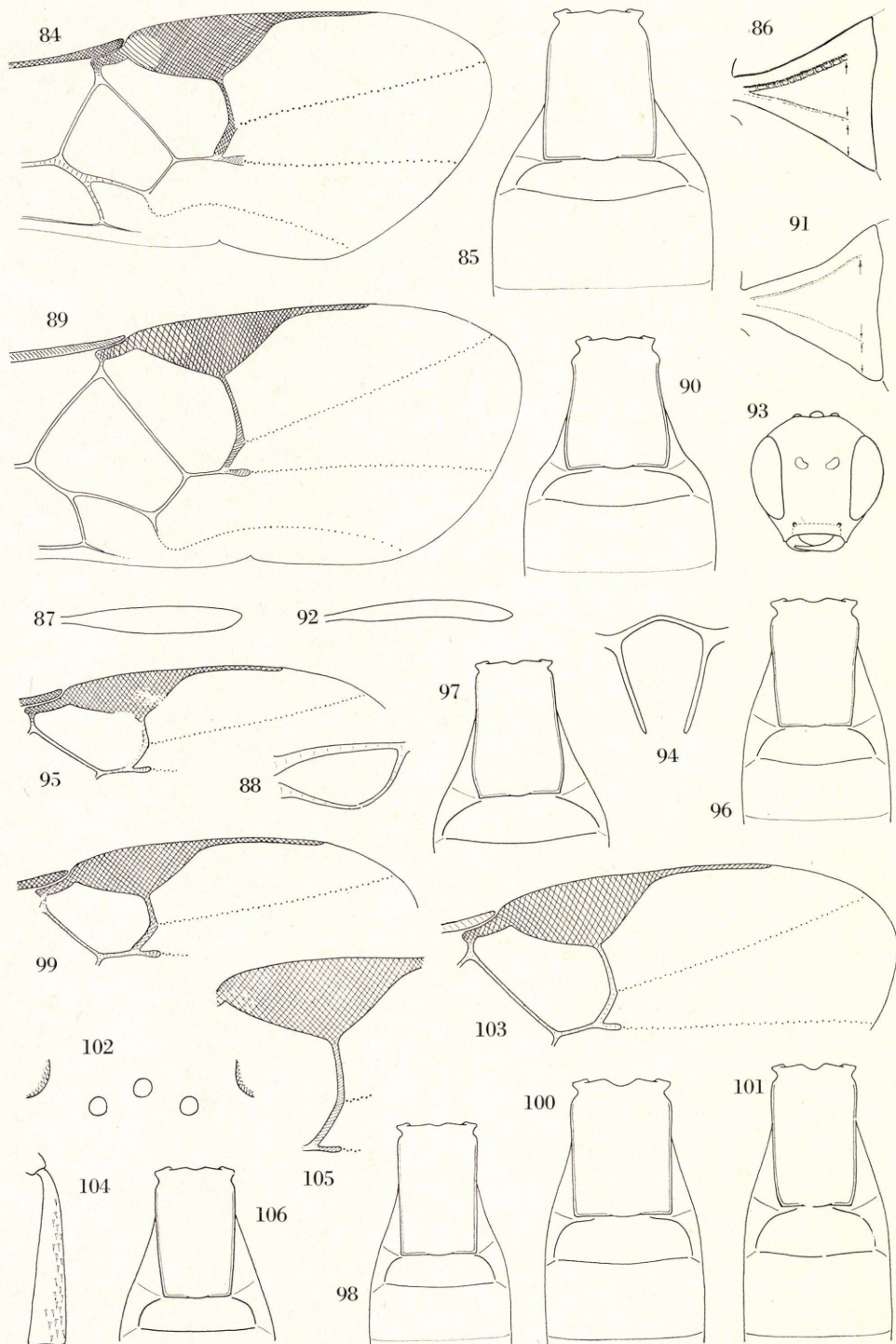
- 66 (63) First tergite posteriorly with more or less widening sides (Fig. 60), or subparallel-sided; see couplets 29 (28) — 31 (30)

A. seriphia NIXON and **A. sicarius** MARSH.

- 67 (62) Metacarp shorter than length of stigma.
68 (69) Head (in frontal view) appearing slightly elongated, inner margin of eyes parallel (Fig. 93). Mesonotum less wide than head (45 : 50, × 100), with weak punctation, interspaces shiny and greater than punctures (Fig. 21). Antennal joints 17–16 cubic or subcubic, tightly articulated. Polished field of postaxilla pushing forward almost as far as anterior end of scutellum (Fig. 94). *r*₁ very short, about half as long as width of stigma, *cuq*₁ somewhat longer than *r*₁ (Fig. 95). Hind two spurs equal in length and nearly reaching middle of basitarsus. Tergites 1–3 similar to that of *A. longicauda* WESM., first tergite shorter and rather converging (Fig. 96), strongly shining, almost smooth. Ovipositor sheath nearly as long as third tibia. Stigma, metacarp brown, *r*₁ + *cuq*₁ less brown, other veins colourless. ♀♂: 2.8–3 mm. — Finland, Hungary, Mongolia

A. midas NIXON, 1972 (!!)

Figs. 84–106. — Figs. 84–87. *Apanteles gallicolus* (GIR.): 84 = distal half of right fore wing, 85 = tergites 1–3, 86 = side of pronotum, 87 = ovipositor sheath. — Figs. 88–92. *A. iranicus* TEL.: 88 = nervellus of right hind wing, 89 = distal half of right fore wing, 90 = tergites 1–3, 91 = side of pronotum, 92 = ovipositor sheath. — Figs. 93–96. *A. midas* NIXON: 93 = head in front, 94 = scutellum with postaxilla, 95 = distal part of right fore wing, 96 = tergites 1–3. — Fig. 97. *A. luctificus* PAPP: tergites 1–2. — Figs. 98–99. *A. obstans* PAPP: 98 = tergites 1–3, 99 = distal part of right fore wing. — Figs. 100–103. *A. lacteipennis* (Curt.): 100 = ♀, tergites 1–3, 101 = ♂, tergites 1–3, 102 = ocelli, 103 = distal part of right fore wing. — Figs. 104–106. *A. szalayi* PAPP: 104 = third tibia with spines, 105 = stigma and *r*₁ + *cuq*₁ of right fore wing, 106 = tergites 1–2



- 69 (68) Head (in frontal view) not elongated, inner margin of eyes converging towards oral part (Fig. 107). Mesonotum and head equal in width. Penultimate joint of antenna more or less longer than broad to subcubic, not tightly articulated. Polished field of postaxilla pushing forwards about half way of scutellum (Fig. 108).
- 70 (71) Body small and rather gracile, its length less than 2.5 mm. First tergite 1.5 times longer than wide at rear, almost parallel-sided; second tergite hardly narrowing laterally, third tergite one-and-a-half times longer than second one (Fig. 98), every tergite smooth, shiny, except uneven hind quarter of first tergite. Metacarp almost as long as stigma, *r1* issuing very near to middle of stigma, *r1* and *cuqul* equal in length, angulated (Fig. 99). Mesonotum shiny and with sparsely placed fine punctation. Hind spurs of same length, as long as one-third of basitarsus. Outer surface of hind tibia with sparse spines. Fore ocellus slightly smaller than hind two ocelli, posterior imaginary tangent to fore ocellus just before (i.e. not touching) hind two ocelli. Ovipositor sheath as long as half third tibia. Proximal two-third of hind tibia testaceous. Carpal vein yellowish brown; stigma, metacarp, *r1*+*cuqul* brown, other veins faintly pigmented (Fig. 99). ♀: 2.2 mm. — Mongolia, USSR: Kazakhstan*
- A. obstans** PAPP, 1971 (!)
- 71 (70) Body at least 2.5 mm, usually about 3 mm, long, rather stout or strong. First tergite subparallel-sided, second tergite either more or less narrowing laterally (Fig. 109) or less transverse (Figs. 100, 101).
- 72 (73) Body relatively strong and stout. Second tergite less transverse, first tergite subquadrate (♀, Fig. 100) or longer than wide at rear (♂ Fig. 101), its hind half with shallow punctures, together with further tergites shiny. Stigma large, at most twice as long as wide, *r1* emitting almost from its middle, *r1* longer than *cuqul* (Fig. 103). Antennal joints 16–17 subcubic, slightly longer than broad (7:5–6, ×100). Ocelli forming a rather low triangle; hind imaginary tangent to anterior ocellus just transecting posterior two ocelli (Fig. 102). Disc of mesonotum with very fine punctation, interspaces greater than punctures, shiny. Two spurs of hind tibia subequal, inner one nearly reaching half length of basitarsus. Ovipositor sheath as long as two-thirds of hind tibia. Carpal vein yellow, stigma brown to opaque brown, metacarp light brown, further veins whitish, wing somewhat milky. ♀♂: 3–4 mm. — England, Kazakhstan, Mongolia. (= *lissonotus* TOBIAS, 1964, !, **syn. n.****); non *lacteipennis* SZÉPLIGETI, 1913 = *assabensis* SHENEFELT, 1972)
- A. lacteipennis** (CURTIS, 1830), nom. rev. (!)
- 73 (72) Body relatively less strong and less stout, normal in size. Second tergite transverse, first tergite less subquadrate (Fig. 109), its hind half to third with extremely small punctation, together with further tergites shiny to polished. Stigma not large, at least two-and-a-half times, usually thrice, longer than wide, emitting *r1* clearly distally from its middle, *r1* slightly shorter than (or as long as) *cuqul* (Fig. 110). Antennal joints 16–17 subcubic to one-third times longer

* Recently I discovered a female specimen in the Hungarian Natural History Museum (Budapest) which was named by TOBIAS as *A. gracilariae* WILK. in 1968, its data: "Карагандинск. Ю. Жана-Арка коксент., 5. VI. 1959".

** Through an exchange a female paratype of *A. lissonotus* TOB. is deposited in the Hungarian Natural History Museum, Budapest. This paratype was compared to the male holotype of *A. lacteipennis* (CURT.) which I borrowed from the National Museum of Victoria, Melbourne, by the courtesy of Mr. A. NEBOISS. Though the two type-specimens represent female and male sex, respectively, the conspecificity was at once obvious to me. Since for a century *A. lacteipennis* was misinterpreted, consequently, supposedly a long series of its representatives are concealed under other names published in the literature. I am convinced that this species is widely distributed in Europe, and also in the Palaearctic Region. See further comments at the footnote of *A. albipennis* NEES, p. 299.

than broad. Ocelli forming a rather high triangle; hind imaginary tangent to fore ocellus hardly touching or at most touching hind two ocelli (Fig. 111). Disc of mesonotum punctured, interspaces posteriorly slightly extending, with faint satine sheen (Fig. 22). Two spurs of hind tibia equal in length, either clearly reaching (European representatives) or nearly as long as (Mongolian representatives) half basitarsus. Ovipositor sheath as long as two-thirds to half hind tibia. Carpal vein, stigma and metacarp opaque brown, further veins faintly pigmented, wings hyaline. ♀♂: 2.5–2.7 mm. — Finland Hungary, USSR (Turkmenia, Siberia), Mongolia. (= *osiris* NIXON, 1972, non *DeSaeger*, 1944)

A. nixosiris PAPP, 1976b (!)

- 74 (33) Metacarp long, at least somewhat, usually distinctly, longer than stigma; its distance from apex of *R* at least somewhat, usually distinctly, smaller than its own length (Figs. e.g. 59, 119, 137, 150, 171, 181, 204, 212).
- 75 (78) Stigma fully yellow. Horizontal half of first tergite with a medio-longitudinal trough.
- 76 (77) Propodeum punctulated medially and behind at its corner, shiny, without any median areola-like impression. Vannal lobe of hind wing convex. First tergite hardly longer than wide at hind, its sides parallel, together with second tergite rugulo-punctulated. Penultimate two joints of antenna subcubic. Inner spur of third tibia shorter than half basitarsus. Stigma opaque yellow. Legs except coxae reddish yellow. ♀: 2.3–2.4 mm. — USSR: Georgia

A. colchicus TOBIAS, 1976a

- 77 (76) Propodeum above lunule with an areola-like impression, laterally from it rugulose, lateral third on both sides of propodeum smooth to uneven, near to fore margin rugulo-punctulated. Vannal lobe of hind wing rather straight. First tergite distinctly longer than its greatest width, its hind end somewhat constricted, together with second tergite rugulose. Penultimate two joints of antenna one-and-a-half times longer than broad. Inner spur of third tibia as long as half basitarsus. Stigma pellucid yellow. Legs dark, at least femora 2–3 black. ♀♂: 3 mm. A member of the *ater*-group, however, its vannal lobe at most straight (and not convex) (cf. NIXON 1972). — Nearctic Region

[A. polychrosidis VIERECK, 1912[(!)]

- 78 (75) Stigma either dark with a pale basal spot or fully dark (brown to blackish brown).
- 79 (210) Stigma dark (opaque brown to blackish brown) with a distinct pale basal spot which extends on proximal third to fourth of stigma (Figs. e.g. 119, 137, 204, 208).
- 80 (95) Pale spot at base of stigma either very small and more or less faintly distinct or spot at all hardly distinct (Figs. 59, 105).
- 81 (82) First and second tergite rugose. *r*₂ as a stub-like vein present at meeting of *r*₁ and *cuq*₁ similar to representatives of *parasitellae*-group. Legs almost entirely reddish yellow. ♀: 3 mm. — Nearctic Region

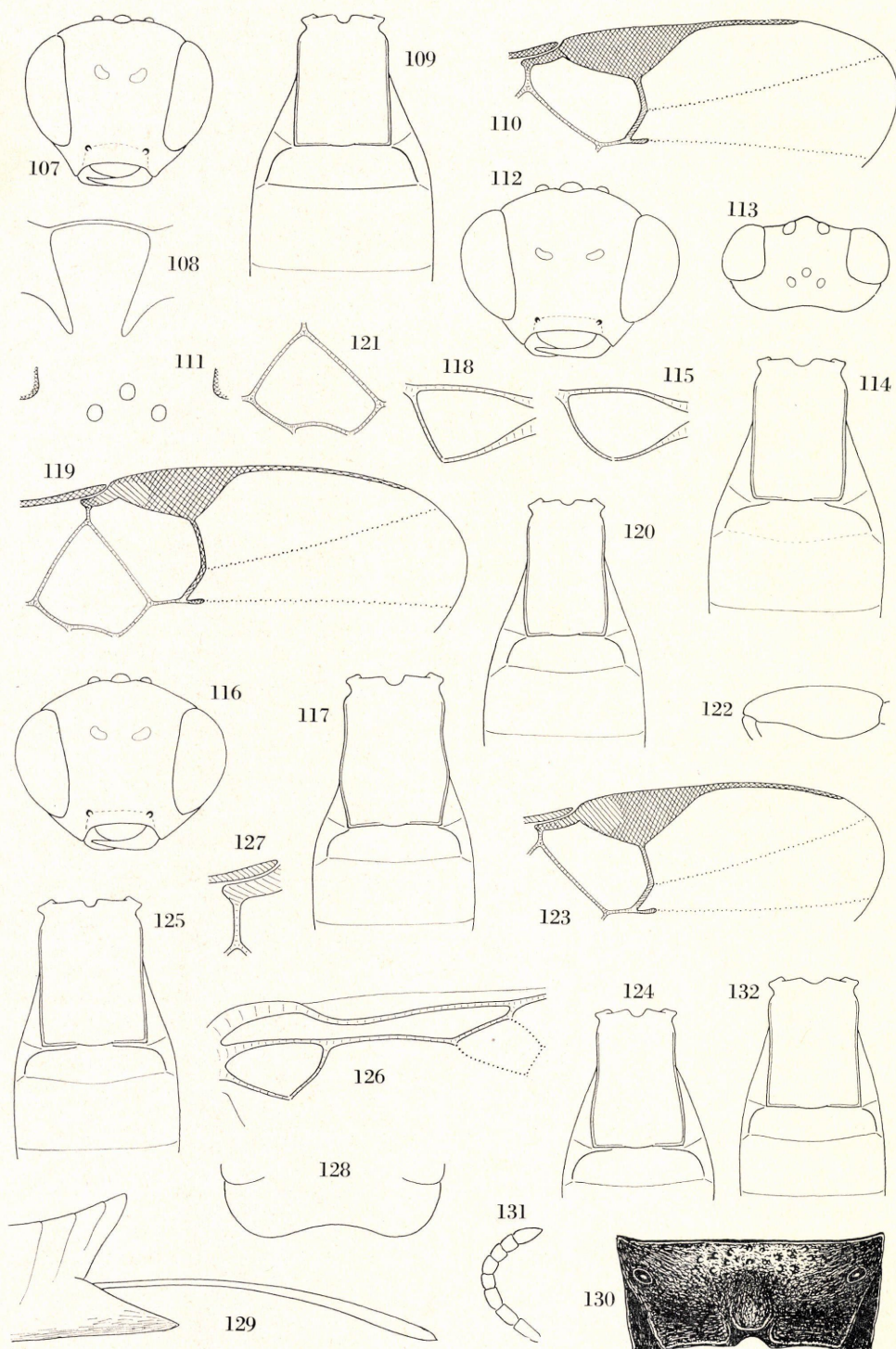
A. consimilis VIERECK, 1911 (!)

- 82 (81) Second tergite at most rugulose, normally smooth. *r*₂ never present as a stub-like vein. Legs more or less dark.
- 83 (86) *D*₁ distinctly wider than high (Fig. 52).
- 84 (85) First tergite behind constricted. Outer surface of third tibia with dense and rather scale-like spines. Ovipositor sheath short, somewhat shorter than third basitarsus. ♀: 2.6–2.8 mm. Further details see in *laevigatus*-group 2, a species of *metacarpalis*-group. — Hungary

[A. coniferoides PAPP, 1972 (!)]

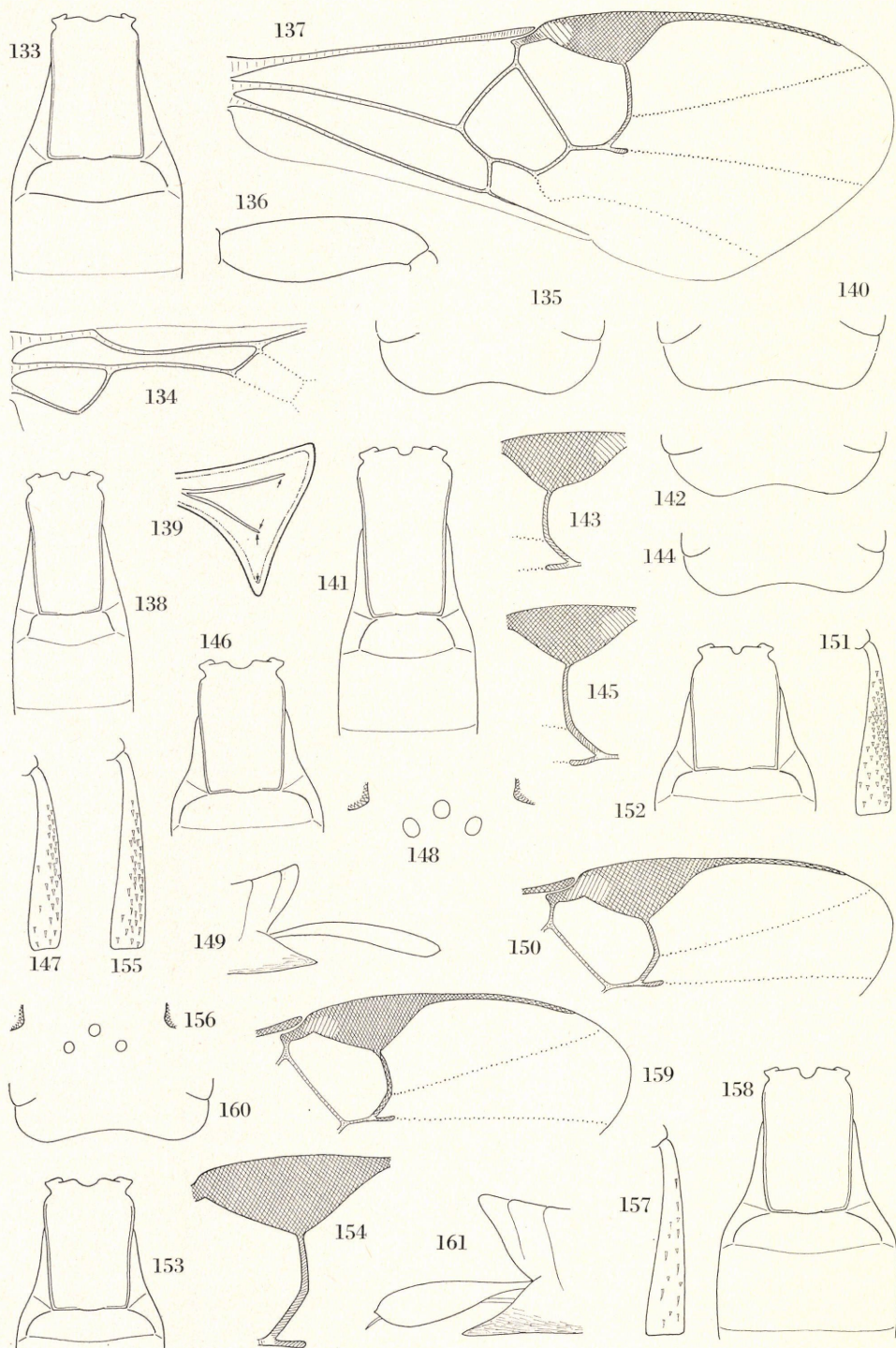
- 85 (84) First tergite posteriorly evenly widening. Outer surface of third tibia with few and rather pointed spines. Ovipositor sheath long, as long as three-fourths of hind tibia. ♀♂: 2.5–2.7 mm. Further details see at couplet 20 (19).
A. cinerosus PAPP, 1971 (!!)
- 86 (83) *D1* at most indistinctly to slightly wider than high (Fig. 59).
- 87 (90) Outer surface of third tibia with extremely numerous and close-set spines (Figs. 104, 155).
- 88 (89) Penultimate joint of antenna one-and-a-half times longer than broad. *r1* longer than *cuqul* (Fig. 105). Ovipositor sheath as long as two-thirds of hind tibia. First tergite almost twice longer than wide at hind (Fig. 106). ♀: 2.4–2.5 mm, ♂: 2.5 mm. Further details see in *laevigatus*-group 2. — Hungary
A. szalayi PAPP, 1977a (!!)
- 89 (88) Penultimate joint of antenna subcubic, at most minutely longer than broad. *r1* shorter than *cuqul* (Fig. 154). Ovipositor sheath about as long as hind tibia + basitarsus. First tergite one-and-a-half times longer than wide at hind. ♀♂: 2.5–2.7 mm. Further details see at couplet 128 (127)
A. soikai NIXON, 1972 (!!)
- 90 (87) Outer surface of third tibia with rather few and much scattered spines.
- 91 (92) First tergite posteriorly evenly widening (Fig. 60). Metacarp about twice as long as its distance from apex of *R* (Fig. 59). Penultimate joint of antenna at most 1.5–1.6 times longer than broad. Mesonotum with fine to very fine punctation (Fig. 27). Ovipositor sheath at most as long as third tibia, usually shorter. Further details see at couplet 30 (31)
A. sicarius MARSHALL, 1885
- 92 (91) First tergite parallel-sided or posteriorly with indistinctly converging sides. Metacarp four-five times as long as its distance from apex of *R*. Penultimate joint of antenna twice or almost twice longer than broad. Mesonotum with less fine, rather strong punctation. Ovipositor sheath as long as third tibia + basitarsus.
- 93 (94) Ocelli forming a relatively low triangle; posterior imaginary tangent to fore ocellus just transecting hind two ocelli. First tergite twice or almost twice longer than wide at hind. ♀: 2.2–2.4 mm, ♂: 1.8–2.4 mm. — Canada
A. renaulti MASON, 1974 (!!)
- 94 (93) Ocelli forming a relatively high triangle; posterior imaginary tangent to fore ocellus before (i.e. not touching) hind two ocelli. First tergite one-and-a-half times longer than wide at hind. ♀♂: 1.8–2.2 mm. — U.S.A.
A. paralechia MUESEBECK, 1931 (!)
- 95 (80) Pale spot at base of stigma always clearly distinct (Fig. e.g. 119, 137, 150, 171, 204, 208).

Figs. 107–132. — Figs. 107–111. *Apanteles nixosiris* PAPP: 107 = head in front, 108 = scutellum with postaxille, 109 = tergites 1–3, 110 = distal part of right fore wing, 111 = ocelli. — Figs. 112–115. *A. faucula* NIXON: 112 = head in front, 113 = head in dorsal view, 114 = tergites 1–3, 115 = nervellus of left hind wing. — Figs. 116–119. *A. dilectus* (HAL.): 116 = head in front, 117 = tergites 1–3, 118 = nervellus of left hind wing, 119 = distal part of right fore wing. — Figs. 120–121. *A. breviventris* (RATZ.): 120 = tergites 1–3, 121 = *D1* of right fore wing. — Figs. 122–124. *A. basiflavus* PAPP: 122 = third right femur, 123 = distal part of right fore wing, 124 = tergites 1–2. — Figs. 125–129. *A. evonymellae* (BCHÉ.): 125 = tergites 1–3, 126 = proximal part of right hind wing, 127 = stalk of *D1* with parastigma, 128 = head behind eyes, 129 = end of abdomen with hypopygium and ovipositor sheath. — Figs. 130–132. *A. simulatus* PAPP: 130 = propodeum, 131 = antennal joints 11–18, 132 = tergites 1–3



- 96 (97) Stigma proximo-distally gradually darkening from yellow to brown, i.e. pale spot not sharply contrasting dark part of stigma (Fig. 78). Head (in dorsal view) distinctly not so wide than thorax between tegulae (Fig. 76). Further details see at couplet 53 (54)
- A. probatus** PAPP, 1973 (!!)
- 97 (96) Pale basal spot of stigma sharply marked off from dark part of stigma (cf. Figs. at couplet 95).
- 98 (117) Legs bright reddish yellow, coxae always black, occasionally third femur with black patterns.
- 99 (100) First tergite nearly twice longer than wide at hind (or distal/horizontal half of first tergite distinctly longer than wide at rear) (Fig. 138). Mesonotum throughout with discrete and relatively strong punctation (Fig. 11). Ovipositor sheath as long as abdomen. Further details see at couplet 119 (120)
- A. immissus** PAPP,
- 100 (99) First tergite distinctly less than twice as long as wide at hind (or distal/horizontal half of first tergite distinctly wider than long) (Figs. 114, 117, 120, 124, 125, 132, 133).
- 101 (106) Third femur with black patterns, its reddish yellow ground colour more or less reduced. Proximal quarter of second femur usually, distal third or half of hind tibia, and entire hind tarsus always black or blackish.
- 102 (103) Face distinctly wider than high, ratio of its upper and lower width to height as 45 : 40 : 30 ($\times 100$, Fig. 112). Eyes (in dorsal view) a little prominent, temples constricted (Fig. 113). 17th joint of antenna subcubic (7 : 6), 16th joint longer than broad (8-9 : 6). Suture between tergites 2-3 almost obliterated, first tergite 1.25-1.4 times longer than broad at rear (Fig. 114). Inner spur of hind tibia longer than outer one and reaching to middle of basitarsus. Nervellus of hind wing incurved (Fig. 115). Disc of mesonotum smooth-looking, with extremely fine punctation, shiny (Fig. 10). Ocelli large, distance between fore and a hind ocelli shorter than diameter of an ocellus. Ovipositor sheath as long as third tibia + basitarsus. Tegulae brown or yellow. Palpi pale or brownish yellow. ♀♂: 3.5-3.8 mm. — England, Hungary
- A. faucula** NIXON, 1972 (!!)
- 103 (102) Face less distinctly wider than high (Fig. 116). Eyes (in dorsal view) not prominent, temples rather rounded or less constricted (Fig. 50, 128, 135). Suture between tergites 2-3 more or less distinct (Figs. 117, 120, 125, 133). Nervellus of hind wing rather straight (Figs. 51, 118, 134). Mesonotum dull.
- 104 (105) Mesonotum quite heavily punctated (Fig. 8). First tergite with subparallel sides (Fig. 117), its hind half rugose, second tergite uneven to rugulose. Pale basal

Figs. 133-161. — Figs. 133-137. *Apanteles laevigatus* (RATZ.): 133 = tergites 1-3, 134 = proximal part of right hind wing, 135 = head behind eyes, 136 = third left femur, 137 = right fore wing. — Figs. 138-140. *A. immissus* PAPP: 138 = tergites 1-3, 139 = side of pronotum, 140 = head behind eyes. — Figs. 141-143. *A. cytherea* NIXON: 141 = tergites 1-3, 142 = head behind eyes, 143 = stigma and *r1+cuqul* of left fore wing. — Figs. 144-145. *A. californicus* MUES.: 144 = head behind eyes, 145 = stigma and *r1+cuqul* of left fore wing. — Figs. 146-150. *A. cheles* NIXON: 146 = tergites 1-2, 147 = third tibia with spines, 148 = ocelli, 149 = end of abdomen with hypopygium and ovipositor sheath, 150 = distal part of right fore wing. — Figs. 151-152. *A. princeps* WILK.: 151 = third tibia with spines, 152 = tergites 1-2. — Figs. 153-156. *A. soikai* NIXON: 153 = tergites 1-2, 154 = stigma and *r1+cuqul* of right fore wing, 155 = third tibia with spines, 156 = ocelli. — Figs. 157-160. *A. emarginatus* (NEES): 157 = third tibia with spines, 158 = tergites 1-3, 159 = distal part of right fore wing, 160 = head behind eyes. — Fig. 161. *A. helleni* NIXON: end of abdomen with hypopygium and ovipositor sheath



spot of stigma distinct, extending on its basal quarter to third. Further details see at couplet 108 (109)

A. dilectus HAL,

- 105 (104) Mesonotum finely punctated. First tergite posteriorly with faintly widening sides (Fig. 49), its hind half rugulose, second tergite smooth to finely rugulose. Pale basal spot of stigma hardly distinct, restricted rather to parastigma. Further details see at couplet 20 (19)

A. cinerosus PAPP,

- 106 (101) Third femur never with black, at most its base more or less darkening, usually entire third femur, together with second one, bright reddish yellow. Distal third of hind tibia and entire tarsus at most faintly infuscate.
- 107 (110) Ovipositor sheath at most as long as, usually shorter than, third tibia. Body rather gracile.
- 108 (109) Antenna at most as long as, usually somewhat shorter than, body; its penultimate two joints either cubic or subcubic. Hind half of first tergite rugose, second tergite uneven to subrugulose, every tergite dull. First tergite relatively broad, at most 1.5–1.4 times longer than wide at hind (Fig. 117). Mesonotum dull and quite heavily punctated, interspaces rather shorter than diameter of punctures (Fig. 8). Spines of outer side of third tibia spiky and rather dispersed. Ovipositor sheath almost as long as third tibia. Venation of fore wing see on Fig. 119, *D1* as wide as high. Scape and pedicel usually testaceous. Hind femur (♂♂!) sometimes with more or less blackish patterns, see couplet 104 (105). ♀: 2.5–2.8 mm, ♂: 2.3–2.6 mm. — Europe (frequent); USSR: Armenia, Siberia (sporadically). (= *femoralis* BOUCHÉ, 1834, !!)

A. dilectus HALIDAY, 1834 (!!)*

- 109 (108) Antenna at least somewhat, usually distinctly, longer than body; its penultimate two joints one-and-a-half to nearly twice as long as broad. Hind half of first tergite smooth to rugulose, second tergite smooth, exceptionally uneven, every tergite shiny. First tergite relatively not broad, 1.6–1.8 times longer than wide at hind, its sides slightly converging (Fig. 120). Mesonotum shiny and with discrete punctation, interspaces not smaller than diameter of punctures and posteriorly slightly increasing in size (Fig. 4). Spines of outer sides of third tibia less spiky and rather dense. Venation of fore wing similar to that of *A. dilectus*, *D1* a little wider than high (Fig. 121). Scape and pedicel black, tergite(s) 2(–3) frequently reddish yellow (♀♀), hind femur of male often blackish. ♀♂: 2.5–3 mm. — England, Sweden, Finland, France, SWITZERLAND Germany, Czechoslovakia, Hungary, European USSR, Egypt, Korea (= *mesoxanthus* RUSCHKA, 1917, !, **syn. n.****, = *nilae* TELENGA, 1961)

A. breviventris RATZBURG, 1848 (!!)

- 110 (107) Ovipositor sheath distinctly, usually one-and-a-half times, longer than third tibia (Fig. 129). Body rather strong.
- 111 (112) Tergites 1–2 testaceous, sternites with hypopygium yellow. Hind femur shorter than normally (Fig. 122), only thrice longer than its greatest width (35 : 12, × 63). Both anterior and posterior fields of postaxilla polished. Hind tangent to fore ocellus touching (and not transecting) hind two ocelli. Stigma nearly as long as metacarp (43 : 50, × 100), *r1* emerging from its middle, *r1* slightly longer

* The neotype was designated by WILKINSON (1945) and I have seen it by DR. E. KÖNIGSMANN's courtesy, the neotype is deposited in the Zoologisches Museums, Berlin.

** I have recognized the above synonymy after my redescription of *A. breviventris* RATZ. (PAPP 1975). This conclusion was achieved by a comparative examination of the neotype of *A. breviventris* RATZ. and the authentic specimens of *A. mesoxanthus* RUSCHKA.

than *cuqul* (Fig. 123). First tergite 1.4 times longer than its hind width, on its hind half slightly widening apically and widest before its hind end (Fig. 124). Ovipositor sheath as long as third tibia + basitarsus. Penultimate antennal joint 1.4 times longer than broad. Face with more and longer silvery hairs than normal (and similar to that of *A. laevigatus* RATZ.). Mesonotum shiny, with fine and shallow, posteriorly somewhat dispersed punctuation. Tegulae pale. Basal pale spot of stigma large. ♀: 2.4 mm. — Korea

A. basiflavus PAPP, 1974b (!)

- 112 (111) Every tergite black, sternites also black, at most first two or three sternites brown, hypopygium either brown or black. Hind femur at least 3.5 times, usually 4–4.5 times (Fig. 136), longer than wide. Anterior field of postaxilla sculptured.

- 113 (114) Body strong, relatively stout. First tergite rather broad, at most 1.3–1.35 times longer than wide at hind, parallel-sided (Fig. 125). Nervellus of hind wing distinctly incurved, *Cu* short and broad (Fig. 126). Stalk of *D1* long (Fig. 127) to very long, otherwise venation of fore wing similar to that of *A. laevigatus* (cf. Fig. 137). Head behind eyes slightly less constricted, rather rounded (Fig. 128). Propodeum on its declivous part punctato-rugulose, on its anterior (or horizontal) part punctated, interspaces greater than punctures. Ovipositor sheath (Fig. 129) as long as third tibia + basitarsus. ♀♂: 4 mm. — Germany, Portugal, Italy, Hungary, Yugoslavia, Lebanon; USSR: Armenia, Azerbaidzhan, Belorussia). (= *iarbass* NIXON, 1972, !!, **syn. n.**)

A. evonymellae (BOUCHÉ, 1834) (!)

- 114 (113) Body not strong, relatively gracile. First tergite 1.5–1.4 times longer than wide at hind, either subparallel- or parallel-sided (Figs. 132, 133). Nervellus of hind wing faintly incurved (*A. laevigatus*, Fig. 134) or straight, *Cu* less short and less broad. Face at most 1.6 times broader than high. Head behind eyes rather constricted, less rounded (*A. laevigatus*, Fig. 135), or rounded (*A. simulatus*). Propodeum with rather restricted sculpture to its middle (Fig. 130).

- 115 (116) Face distinctly (or 1.7 times) broader than high, ratio of its breadth to height as 40 : 25 (×100). Penultimate joint of antenna one-and-a-third to one-and-a-half times longer than broad, last 3–4 joints very weakly moniliform, not thickened. Head behind eyes rather constricted (Fig. 135). Disc of mesonotum more densely punctated, interspaces hardly becoming bigger posteriorly and not greater than diameter of punctures (Fig. 16). First tergite subparallel-sided, third tergite nearly twice longer than second one (Fig. 133). Ovipositor sheath as long as hind tibia + basitarsus, its distal third somewhat widening (Fig. 117, in WILKINSON 1945: 168). ♀: 2.5–3.5 mm, ♂: 2.2–2.8 mm. Further details see at couplets 24 (25) and 177(178). — Widely distributed in the West-Palae-arctic Region but not common. (= *hoplites* RATZBURG, 1848, !!)

A. laevigatus RATZBURG, 1848 (!)

- 116 (115) Face less distinctly (or 1.3–1.4 times) broader than high, ratio of its breadth to height as 28 : 22–20 (×100). Penultimate joint of antenna subcubic to cubic, last 4–5 joints slightly thickened and moniliform (Fig. 131). Head behind eyes rather rounded (cf. Fig. 128). Disc of mesonotum less densely punctated, interspaces gradually becoming bigger posteriorly and more or less greater than diameter of punctures. First tergite parallel-sided, third tergite 1.6(–1.7) times as long as second one (Fig. 132). Ovipositor sheath as long as hind tibia + basitarsus, evenly wide. ♀: 2.4–2.7 mm, ♂: 2.3 mm. — Korea

A. simulatus PAPP, 1974b (!)

- 117 (98) Legs not bright reddish yellow, at least femora 2–3, usually legs mostly black or dark. If legs are reddish yellow (*A. immissus* PAPP) then first tergite elongated, nearly twice as long as wide at hind (Fig. 138).
- 118 (123) First tergite conspicuously elongated, at least nearly twice (Fig. 138), normally more than twice, as long as wide at rear, second tergite at most twice wider than long (Fig. 141).
- 119 (120) Legs bright reddish yellow, coxae black, trochanter brownish, middle and hind femora basally faintly blackish, tarsi 1–2 rather whitish, tarsus 3 fumous. First tergite nearly twice as long as wide at hind, with weakly sinuate sides, third tergite twice longer than second one (Fig. 138). Middle zone on side of pronotum one-and-a-half times wider than lower zone (Fig. 139). Mesonotum throughout with discrete punctation, interspaces shiny, about equal with diameter of punctures and posteriorly slightly becoming bigger (Fig. 11). Two spurs of hind tibia subequal, inner one almost as long as half basitarsus. Penultimate joint of antenna subcubic (7–8 : 6, $\times 100$). Hypopygium reaching apex of abdomen, ovipositor sheath as long as third tibia + basitarsus, almost evenly wide. Head behind eyes rather constricted (Fig. 140). Tegulae yellow with brown margin. ♀ : 3 mm. — Hungary, Germany*

A. immissus PAPP 1977a (!!)

- 120 (119) Legs mostly black or dark. First tergite more than twice as long as wide at hind (Fig. 141). Middle zone on side of pronotum twice wider than lower zone. Mesonotum also with discrete punctation, however, interspaces more or less smaller than diameter of punctures and posteriorly not increasing in size. Ovipositor sheath as long as third tibia + tarsal joints 1–2. Tegulae black.
- 121 (122) Head behind eyes constricted (Fig. 142). Penultimate joint of antenna subcubic. Face distinctly (1.35 times) wider than high. Inner spur of hind tibia longer than outer one and reaching middle of basitarsus. Interspaces of mesonotum shiny, i.e. without any microsculpture. *r1* emitting stigma distal from its middle and hardly longer than *cuqu1* (Fig. 143). Wings very faintly brownish. ♀♂ : 2.8–3 mm. — England, Mongolia

A. cytherea NIXON, 1972 (!!)

- 122 (121) Head behind eyes rounded (Fig. 144). Penultimate joint of antenna twice longer than broad. Face less distinctly (1.2–1.25 times) wider than high. Inner spur of hind tibia either equal or subequal with outer one and not reaching middle of basitarsus. Interspaces of mesonotum dull, i.e. with microsculpture (Fig. 7). *r1* emitting from middle of stigma and longer than *cuqu1* (Fig. 145). Wings hyaline. ♀ : 2.8–3 mm, ♂ : 2.8 mm. See also couplet 190 (189). — Nearctic Region

A. californicus MUESEBECK, 1920 (!)

- 123 (118) First tergite not conspicuously elongated, distinctly less than twice as long as wide at rear, second tergite at least two-and-a-half times, usually thrice to five times, wider than long (Figs. e.g. 146, 158, 163, 172, 185, 189, 202, 214).
- 124 (129) Spines of outer side of hind tibia extremely numerous and close-set, especially on proximal half (Fig. 147, 151, 155).
- 125 (126) Propodeum rugulose medially and antero-laterally, postero-laterally smooth to uneven or at most with few rugulae, rather dull (Fig. 6). Mesonotum dull, i.e. interspaces with microsculpture (Fig. 5). Basal spot of stigma normally well

* In the material named by H. REINHARD and now housed in the Forschungsinstitut Senckenberg (Frankfurt a. M.) I found a female with the name-label „*Microgaster Hoplitus* RTZ.” (No. 525, No. 1225); this specimen proved to be a representative of *A. immissus* and supposedly was taken in Germany.

distinct, only exceptionally more or less obsolete; stigma often with a pale, rather indistinct, distal spot (Fig. 150). First tergite one-and-a-half times longer than wide, subparallel to slightly converging sided (Fig. 146). Ocelli on a low triangle, hind tangent to anterior ocellus transecting posterior pair (Fig. 148). Ovipositor sheath about three-quarters as long as hind tibia, widening apically (Fig. 149). Hind tibia weakly infusate distally. ♀♂: 3 mm. See also couplet 168 (167). — Sweden, Finland, Hungary

A. cheles NIXON, 1972 (!)

126 (125) Propodeum at most with few rugulae around lunule, otherwise smooth with disperse, shallow and small punctation or more or less uneven, shiny. Mesonotum shiny and with discrete punctation (Fig. 28). Basal spot of stigma normally hardly distinct, often indistinct, no distal spot (Fig. 154). First tergite at most 1.4 times longer than wide at rear, with faintly converging sides (Figs. 152, 153). Ocelli on a rather high triangle, hind tangent to anterior ocellus at most touching posterior pair (Fig. 156). Ovipositor sheath at least as long as hind tibia, normally somewhat longer.

127 (128) Head (in frontal view) almost round in its outline, i.e. indistinctly broader than high (Fig. 9, in NIXON 1972: 740). First tergite subquadrate, only a third longer than its greatest width before middle, its sides slightly converging posteriorly (Fig. 152). Ovipositor sheath as long as or at most a quarter longer than hind tibia. Stigma normally with a pale though hardly distinct basal spot, exceptionally effaced. ♀: 2.4–2.8 mm, ♂: 2.3–2.7 mm — England, Hungary, Rumania (Transylvania), Korea*

A. princeps WILKINSON, 1941 (!)**

128 (127) Head (in frontal view) distinctly transverse in its outline, i.e. distinctly broader than high. First tergite 1.3–1.4 times longer than its greatest width at its base, its sides slightly converging from its base (Fig. 153). Ovipositor sheath about as long as hind tibia + basitarsus. Stigma normally fully brown, though sometimes with a hardly distinct pale basal spot. ♀♂: 2.5–2.7 mm. Further details see in *laevigatus*-group 2. — North Italy, Hungary

A. soikai NIXON, 1972 (!)**

129 (124) Spines of outer side of hind tibia less numerous or few, rather disperse (Fig. 157).

130 (135) Flagellum tapering apically and last four-five joints of antenna either fully uneven to smooth or its rugulosity gradually weakening to an uneven surface.

131 (132) Two preapical joints of antenna one-and-a-half to nearly twice as long as broad, last four-five joints fully uneven to smooth. A species of the *lineipes*-group, however, easily confused with the members of the *laevigatus*-group

[**A. annularis** (NEES, 1834) (!)]

132 (131) Two preapical joints of antenna subcubic to one-and-a-third times as long as broad, rugulosity of last four-five joints gradually weakening to uneven surface.

133 (134) Head (in dorsal view) behind eyes strongly constricted (Fig. 177). First tergite 1.6 times longer than wide at hind, its sides anteriorly feebly arched, posteriorly

* The single female representative of *A. princeps* from Korea has a conspicuously long ovipositor, namely 1.6 times as long as hind tibia, otherwise agreeing with the European form (PAPP 1974b).

** The two species (*A. princeps* WILK. and *A. soikai* NIXON) are extremely similar to each other. In NIXON's key (1972) the only distinctive character is the presence or absence of a pale basal spot on stigma, indeed, this feature may not be considered as a constant one; further details see in the key. I venture to remark that a long series of (reared!) material of the forms *A. princeps* and *A. soikai* will lead to the conclusion that the two names are synonymous.

parallel (Fig. 178). Stigma 2.5 times longer than wide, emitting *r*1 clearly distally (Fig. 179). Ovipositor sheath as long as three-fourths of hind tibia. Mesonotum rather with shallow punctation. ♀: 3 mm. — Hungary

A. furtim PAPP, 1977 (!)

- 134 (133) Head behind eyes rounded (Fig. 160). First tergite 1.4–1.5 times longer than wide before its hind end, subparallel-sided, its posterior end slightly constricted (Fig. 158). Stigma relatively broad, twice longer than wide, emitting *r*1 less clearly distally (Fig. 159). Ovipositor sheath as long as hind tibia. Mesonotum with rather sharp punctation. ♀: 3–3.2 mm, ♂: 2.8–3 mm. — Europe; USSR: Azerbaidzhan, Armenia

A. emarginatus (NEES, 1834) (!)

- 135 (130) Flagellum not tapering apically and every joint of antenna with similar rugulosity.
 136 (143) Ovipositor sheath conspicuously shorter than hind tibia and markedly expanded towards apex (Figs. 54, 161, 162).
 137 (138) Ovipositor sheath as long as hind femur, however, weakly widening apically. Legs brown to yellowish brown. Further details see at couplet 147 (148)

A. varifemur ABDINB.

- 138 (137) Ovipositor sheath shorter than hind femur, about the length of hind basitarsus, either evenly wide or widening apically (Figs. 54, 161, 162).
 139 (140) Mesonotum with close and rather strong punctation, interspaces smaller than punctures, first tergite widening behind and with rather arched sides (Figs. 29, 53). Further details see at couplet 25 (24)

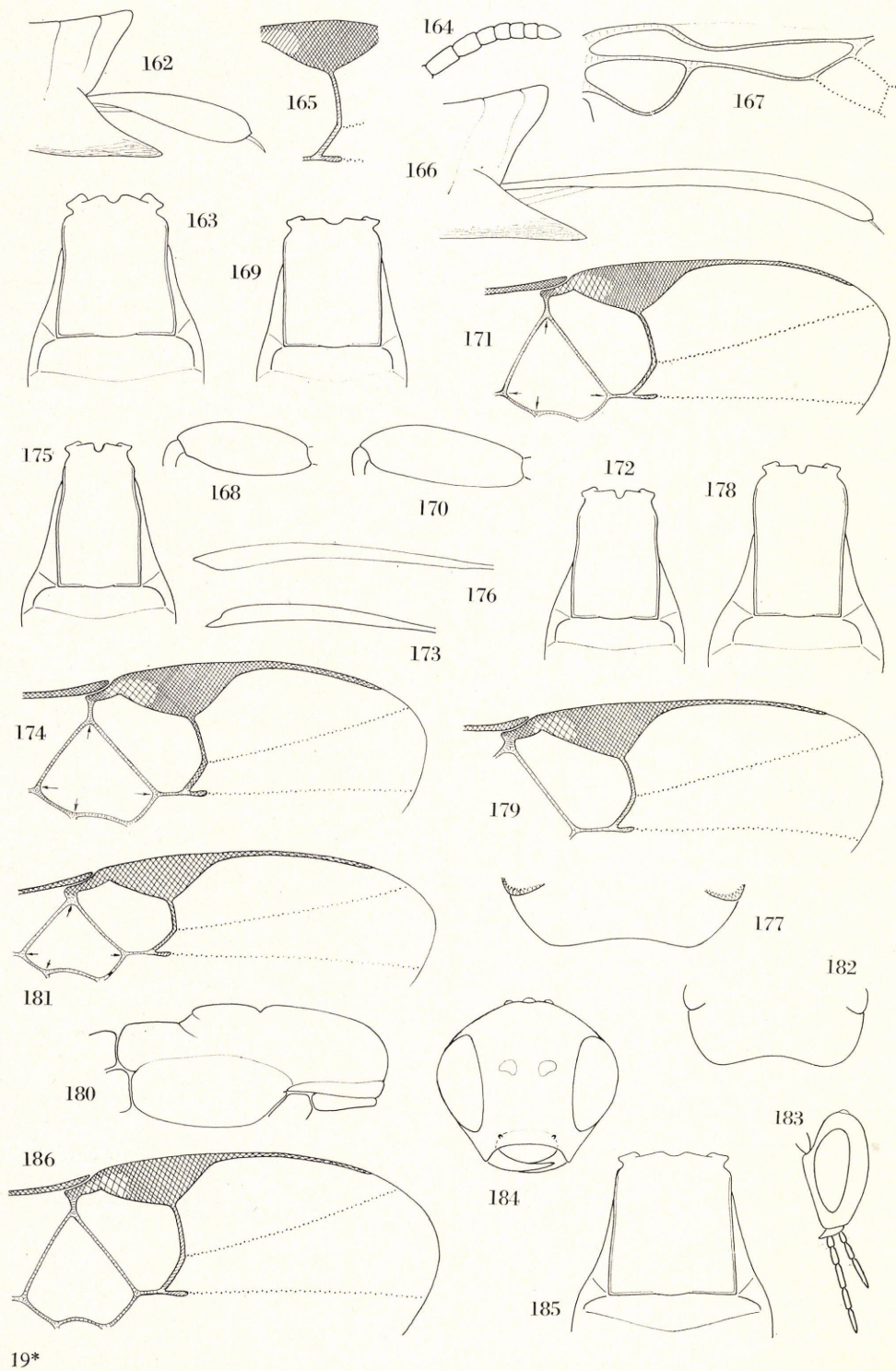
A. sophiae PAPP

- 140 (139) Mesonotum shiny, with small and rather disperse punctation, interspaces and punctures about same size. First tergite parallel- or subparallel-sided (Fig. 163).
 141 (142) Antennal joints 17–13 at least distinctly cubic, usually rather transverse (i.e. slightly broader than long, Fig. 35 in NIXON 1972: 743); antenna short, as long as head, thorax and anterior half of first tergite. Prescutellar furrow relatively narrow and shallow. Inner spur of hind tibia somewhat longer than outer one, as long as half basitarsus. Ovipositor sheath always shorter than hind basitarsus (Fig. 161). Wings hyaline. ♀: 2.8–3 mm. — Finland, Germany, Hungary, Bulgaria (new record)

A. helleni NIXON, 1972 (!)

- 142 (141) Antennal joints 17–16 cubic to subcubic, further joints gradually lengthening, antenna less short and as long as head, thorax and anterior half of abdomen. Prescutellar furrow relatively less narrow and rather deep. Inner spur of hind tibia distinctly longer than outer one and extending beyond half basitarsus. Ovipositor sheath as long as hind basitarsus (Fig. 162). Wings fumous. ♀: 3.8–

Figs. 162–186. — Figs. 162–163. *Apanteles praetor* MARSH.: 162 = end of abdomen with hypopygium and ovipositor sheath, 163 = tergites 1–2. — Figs. 164–167. *A. drusilla* NIXON: 164 = antennal joints 12–18, 165 = stigma and *r*1 + *cu*q₁ of right fore wing, 166 = end of abdomen with hypopygium and ovipositor sheath, 167 = proximal part of right hind wing. — Figs. 168–169. *A. reicharti* PAPP: 168 = third right femur, 169 = tergites 1–2. — Figs. 170–173. *A. propinquus* PAPP: 170 = third right femur, 171 = distal part of right fore wing, 172 = tergites 1–2, 173 = ovipositor sheath. — Figs. 174–176. *A. laevigatoides* NIXON: 174 = distal part of right fore wing, 175 = tergites 1–2, 176 = ovipositor sheath. — Figs. 177–179. *A. furtim* PAPP: 177 = head behind eyes, 178 = tergites 1–2, 179 = distal part of right fore wing. — Figs. 180–182. *A. victor* WILK.: 180 = thorax in lateral view, 181 = distal part of right fore wing, 182 = head behind eyes. — Figs. 183–186. *A. marica* NIXON: 183 = head with labial and maxillar palpi, 184 = head in front, 185 = tergites 1–2, 186 = distal part of right fore wing



4 mm, ♂: 3.5–3.8 mm. — England, Sweden, Finland, Hungary; USSR: Armenia, Russia

A. praetor MARSHALL, 1885 (!)

- 143 (136) Ovipositor sheath at least as long as or longer than hind tibia, never markedly expanded towards apex (Figs. 166, 173, 176).
 144 (159) Antennal joints 17–15 either transverse (Fig. 164) or cubic or at most subcubic. Antenna distinctly shorter than body, normally as long as head, thorax and anterior half of abdomen.
 145 (146) Every leg, except black coxae, bright reddish yellow. Ovipositor sheath as long as hind tibia and basitarsus. Body conspicuously shiny. First tergite parallel-sided. Further details see at couplet 116 (115)

A. simulatus PAPP

- 146 (145) At least third femur either brown or fully black, usually legs rather dark to black.
 147 (148) Third femur brown, legs rather brown to yellowish brown. Ovipositor sheath as long as third femur, weakly widening apically. First tergite parallel-sided, one-and-a-half times longer than wide distally, together with second tergite rugulose. Inner spur of hind tibia slightly shorter than half basitarsus. *r1* and *cuqu1* rather weakly angled and equal in length. ♀: 2.5–2.8 mm. — USSR: Azerbaidzhan

A. varifemur ABDINBEKOVA, 1969

- 148 (147) Third femur black, second femur at least basally black, tibiae 3 black or blackish fumous with yellow base. Fore leg predominantly yellow, except *A. drusilla* NIXON. Every coxa black.
 149 (150) First tergite widening antero-posteriorly and with arched sides (Figs. 29, 53). Ovipositor sheath broad and short, not longer than third basitarsus. Further details see couplet 25 (24)

A. sophiae PAPP

- 150 (149) First tergite parallel- to subparallel-sided. Ovipositor sheath, except *A. helleni* NIXON and *A. praetor* MARSH., at least as long as third tibia, not conspicuously broad (Figs. 166, 173, 176).
 151 (152) Ovipositor sheath short, as long as third basitarsus, conspicuously widening apically (Figs. 161, 162). Mesonotum shiny, with fine punctuation, interspaces and punctures predominantly equal in size. Further details see at couplet 140 (139) — 142 (141)

A. helleni NIXON and **A. praetor** MARSH.

- 152 (151) Ovipositor sheath as long as third tibia or longer, not conspicuously widening apically (Figs. 166, 173, 176). Mesonotum, except *A. drusilla* NIXON, dull, with discrete and close punctuation (Figs. 26, 9).
 153 (154) Head distinctly narrower than width of thorax between tegulae (Fig. 16, in NIXON 1972: 740). Mesonotum shiny with discrete and rather deep punctuation, interspaces slightly increasing posteriorly (Fig. 9). Antennal joints 17–15 transverse (Fig. 164), i.e. broader than long (8–7:6, ×100), joint 14 cubic, joints 13–3 gradually becoming longer. Inner spur of hind tibia somewhat longer than outer and not reaching half basitarsus*. Spines of outer side of hind tibia fiery-red. *r1* longer than *cuqu1* and meeting in an obtuse angle (Fig. 165). Ovipositor sheath 1.5–1.7 times longer than third tibia, feebly arched (Fig. 166). Legs unusually dark to black, only fore tibia and tarsus entirely brownish yellow, apex of fore and middle femora brownish yellow, basal fifth-sixth of middle

* In NIXON's (1972: 715) description inner spur of *A. drusilla* "... reaching middle of hind basitarsus."

and hind tibia yellow. Stigma and metacarp blackish brown, basal spot of stigma yellow, $r1 + cuqul$ and costal vein opaque greyish brown, further veins colourless, wings with a milky tint. ♀: 3–3.5 mm, ♂: 3 mm. — England, Hungary, Bulgaria, Mongolia

A. drusilla NIXON, 1972 (!!) nom. rev.*

154 (153) Head at most slightly narrower than thorax, normally head and thorax equal in width. Mesonotum dull with strong and close punctation, interspaces smaller than punctures and indistinctly increasing in size posteriorly (Fig. 26). Penultimate two-three joints of antenna rather cubic, at most 17th joint faintly transverse. Ovipositor sheath about length of hind tibia. Legs with more yellow to brownish yellow colour.

155 (156) Third femur (Fig. 168) somewhat flattened and relatively short, less than thrice as long as broad (40 : 15, $\times 100$). Face (in frontal view) transverse, 1.4 times wider below than high (30 : 21, $\times 100$), inner margin of eyes subparallel, i.e. feebly converging below. First tergite (Fig. 169) parallel-sided, subquadrate, somewhat longer than wide at hind (36 : 30, $\times 100$). Prescutellar furrow rather deep and wide. Light colour of legs with much whitish yellow pattern. Stigma with a faint distal spot, its basal spot distinct. ♀: 2.8 mm. — Hungary

A. reicharti PAPP, 1974a (!!)

156 (155) Third femur not flattened and not short, at least thrice as long as broad (Fig. 170). Face (in frontal view) less transverse, 1.2–1.3 times wider below than high (32–35 : 27, $\times 100$), inner margin of eyes parallel. First tergite 1.4–1.6 times longer than wide at rear. Prescutellar furrow shallow and narrow. Light colour of legs with few whitish patterns. Stigma not light distally.

157 (158) $D1$ high, its width to height as 42 : 40 ($\times 100$), $d2$ less longer than $d1$ (20 : 16, $\times 100$); $r1$ longer than $cuqul$ and emitting indistinctly distally from stigma (Fig. 171). First tergite 1.4 times longer than wide at rear, ratio of its length to fore, median and hind width as 40 : 26 : 29 : 29 (Fig. 172). Last three joints of antenna tightly adpressed to each other. Inner spur of hind tibia equal with half basitarsus. Apex of ovipositor sheath notched (Fig. 173). Face punctulate-subrugulose. Fore half of postaxille rather smooth. Outer surface of hind tibia with numerous spines. Wings hyaline. ♀: 3.4 mm. — Hungary, USSR: Sochi (= *praetorius* TOBIAS 1976, !!, syn. n.**)

A. propinquus PAPP, 1975 (!!)

158 (157) $D1$ wide, its width to height as 43–42 : 34 ($\times 100$), $d2$ much longer than $d1$ (24–23 : 12–13, $\times 100$); $r1$ as long as or slightly longer than $cuqul$ and emitting distinctly distally from stigma (Fig. 174). First tergite 1.6 times as long as wide at rear, ratio of its length to fore, median and hind width as 40 : 23 : 25 : 25 (Fig. 175). Last three joints of antenna monili- to submoniliform. Inner spur of hind tibia shorter than half basitarsus. Apex of ovipositor sheath evenly pointed (Fig. 176). Face with very fine punctation. Fore half of postaxille rugulose. Outer surface of hind tibia with few spines. Wings subhyaline to faintly fumous. ♀: 2.8–3 mm, ♂: 2.5–2.7 mm. — England, Germany, Hungary

A. laevigatoides NIXON, 1972 (!!)

159 (144) At most 17th antennal joint subcubic to cubic, further joints longer than broad. Antenna as long as body or indistinctly shorter.

* Previously the two names (*A. albipennis* NEES and *A. drusilla* NIXON) were considered to be synonyms by me (PAPP 1973). This was a mistake, I failed to notice some features expounded in the key which, in my recent comprehension, must be accepted as specific characters and differences. Still the two species are extremely difficult to separate from each other, a good practice is required to recognize them.

**The above synonymy was recently established on the basis of a paratype examination kindly lent to me by V. I. TOBIAS (Leningrad).

- 160 (169) Ovipositor sheath as long as third tibia, at most somewhat shorter or longer.
 161 (162) Three preapical joints of antenna cubic. Mesonotum dull (Fig. 26). Further details see at couplet 157 (158) and 155 (156)

A. propinquus PAPP and **A. reicharti** PAPP

- 162 (161) At most penultimate joint of antenna subcubic to cubic. Mesonotum shiny or subshiny.
 163 (164) Hind third of first tergite distinctly narrowing. First tergite with scattered small punctures, second tergite almost smooth to entirely smooth. A member of the *lineipes*-group

[A. subemarginatus ABDINBEKOVA, 1969]

- 164 (163) First tergite parallel- or subparallel-sided, not narrowing posteriorly.
 165 (166) Body gracile, 2 mm long (♀♂). First tergite twice longer than wide at hind, its hind third gradually narrowing. Second tergite two-and-a-half times broader than long. Mesonotum with dense and discrete punctation. Ovipositor sheath as long as hind tibia. Face subquadrate, ratio of its height to lower width as 18 : 22 ($\times 100$). *r*1 emitting from middle of stigma. Head and thorax black, abdomen brown, first tergite blackish brown. Dark colour of legs brown. — Nearctic Region (Maine, Ontario)

A. thujae MUSEBECK, 1935 (!)

- 166 (165) Body stout or strong, at least 3 mm long. First tergite at most 1.6 times longer than wide at hind and rather feebly narrowing. Second tergite 3.5–4 times broader than long. Ovipositor sheath three-quarters as long as third tibia. *r*1 emitting more or less from distal half of stigma.
 167 (168) Head behind eyes strongly constricted (Fig. 177). Mesonotum shiny, with shallow and fine punctation, interspaces about size of punctures or slightly greater. First tergite with characteristic sides, anteriorly feebly arched, posteriorly parallel (Fig. 178). Stalk of *D*1 short, at most as long as its own width; stigma distinctly more than twice as long as wide (45 : 18, $\times 100$), and emitting *r*1 visibly from its distal half (Fig. 179). Spines of outer surface of third tibia less numerous and not closely-set. Head, thorax and first tergite black, abdomen dark brown to brown. Light colour of legs rather pale. Stigma without any distal pale spot. ♀ : 3 mm. — Hungary

A. furtim PAPP, 1977 (!)

- 168 (167) Head behind eyes rounded as normal. Mesonotum faintly dull to dull, with dense and rather strong punctation, interspaces smaller than punctures. First tergite with subparallel to slightly converging sides (Fig. 146). Stalk of *D*1 long, almost twice longer than its own width; stigma hardly more than twice as long as wide (50 : 23–22, $\times 100$), and emitting *r*1 near to middle of stigma (Fig. 150). Spines of outer surface of third tibia extremely numerous and closely-set (reminding that of *A. princeps* WILK, (Fig. 151). Body black. Light colour of legs yellow to dark yellow. Stigma often with a pale and rather indistinct distal spot. ♀ : 3 mm. See also couplet 125 (126)

A. cheles NIX.

- 169 (160) Ovipositor sheath distinctly, usually one-and-a-half times, longer than third tibia. Body, in majority of species, strong to stout, over 3 mm in length.
 170 (179) Legs, except black coxae, either entirely reddish yellow or only third femur with black patterns.
 171 (172) Third femur with black patterns. Proximal quarter of second femur usually, distal third or half of hind tibia, and entire hind tarsus always black or blackish. First tergite 1.25–1.4 times longer than broad at rear (Fig. 114). Temples constricted (Fig. 113). Further details see at couplet 102 (103)

A. faucula NIX.

172 (171) Legs, except coxae, reddish yellow. Third femur at most basally darkening, hind tibia distally and entire hind tarsus at most faintly infusate.

173 (174) Tergites 1–2 testaceous, sternites with hypopygium yellow. Hind femur short, three times longer than wide (Fig. 122). Further details see at couplet 111 (112)

A. basiflavus PAPP

174 (173) Abdomen black, at most anterior sternites brown to blackish brown. Third femur at least 3.5 times longer than wide.

175 (176) First tergite subquadrate, 1.3–1.35 times longer than wide at hind, parallel-sided (Fig. 125). Nervellus of hind wing distinctly incurved (Fig. 126). Further details see at couplet 113 (114)

A. evonymellae (BOUCHÉ)

176 (175) First tergite 1.5–1.4 times longer than wide at hind (Figs. 132, 133). Nervellus of hind wing faintly incurved (Fig. 134).

177 (178) Face distinctly (or 1.7 times) broader than high. Penultimate joint of antenna one-and-a-third to one-and-a-half times longer than broad. Further details see at couplet 115 (116)

A. laevigatus (RATZ.)

178 (177) Face less distinctly (or 1.3–1.4 times) broader than high. Penultimate joint of antenna subcubic to cubic. Further details see at couplet 116 (115)

A. simulatus PAPP

179 (170) Legs, at least hind and middle femora, black or rather black.

180 (183) Last four-five joints of antenna distally with gradually weakening rugulosity.

181 (182) Head behind eyes strongly constricted (Fig. 177). First tergite 1.6 times longer than wide at hind (Fig. 178). Further details see at couplets 167 (168) and 133 (134)

A. furtim PAPP

182 (181) Head behind eyes rounded (Fig. 160). First tergite 1.4–1.5 times longer than wide before its hind end (Fig. 158). Further details see at couplet 134 (133)

A. emarginatus (NEES)

183 (180) Last four-five joints of antenna with similar rugulosity as in rest of joints.

184 (185) Three preapical joints of antenna indistinctly transverse to cubic, monili- to submoniliform. Further details see at couplet 158 (157)

A. laevigatoides NIX.

185 (184) Three preapical joints never transverse, at most indistinctly cubic to subcubic, and, similar to further joints, tightly adpressed to each other.

186 (187) Outer side of third tibia with conspicuously numerous and closely-set spines (Fig. 151). Head (in frontal view) almost round in its outline. Further details see at couplet 127 (128)

A. princeps WILK.

187 (186) Spines of outer side of third tibia less numerous and dispersed.

188 (191) Thorax and abdomen elongated, thorax (in lateral view) twice or nearly twice longer than high, brow of propodeum placed posterior to middle and, therefore, propodeum having a long dorsal surface (Fig. 180). Ovipositor sheath as long as third tibia + tarsal joints 1–2.

189 (190) *D1* lacking any stalk and distinctly wider than high, *r1* and *cuq1* equal in length (Fig. 181). Horizontal surface of first tergite polished and with few discrete punctures. Preapical two joints of antenna subcubic, i.e. somewhat longer than broad. Head (in dorsal view) behind eyes evenly rounded (Fig. 182). Punctuation of mesonotum relatively deep, interspaces shiny to polished and posteriorly

minutely though obviously increasing (Fig. 32). Legs dark with few light patterns. ♀: 2.5–3 mm, ♂: 2.3–2.7 mm. — England (Isle of Wight)

A. victor WILKINSON, 1941 (!)

- 190 (189) *D1* with a distinct stalk and only slightly wider than high, *r1* clearly longer than *cuq1* (Fig. 145). Horizontal surface of first tergite dull or subshiny, evenly rugulose. Preapical two joints of antenna twice longer than broad. Head (in dorsal view) behind eyes strongly rounded (Fig. 144). Punctuation of mesonotum relatively shallow, interspaces dull and posteriorly indistinctly increasing (Fig. 7). Legs dark, however, fore leg from femur yellow. ♀: 2.8–3 mm, ♂: 2.8 mm. See also couplet 122 (121)

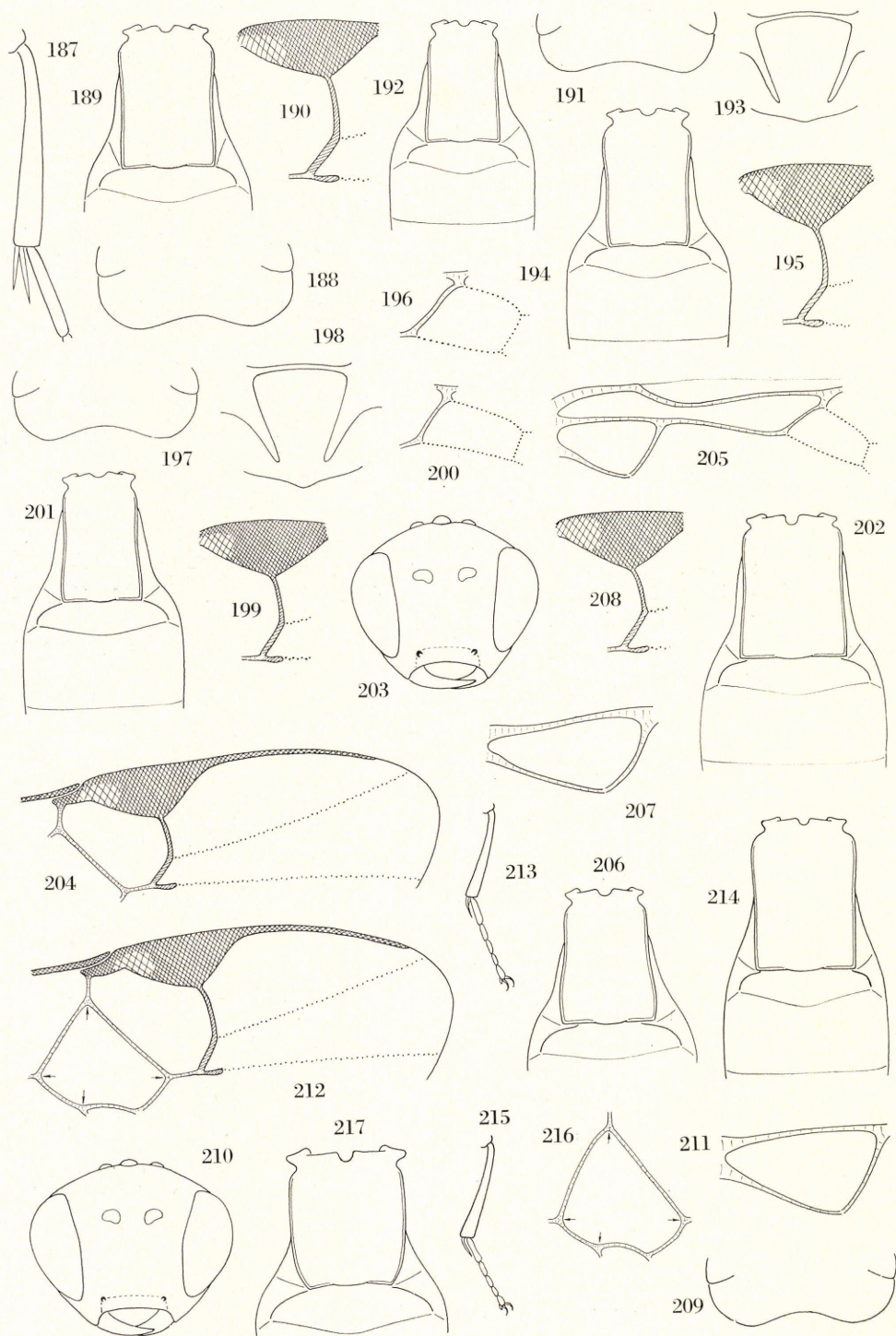
A. californicus MUES.

- 191 (188) Thorax and abdomen not elongated, normal or (somewhat) stout in form; brow of propodeum anterior to middle and so propodeum with a short dorsal surface.
- 192 (193) Last joint of labial palpus extremely long, one-and-a-half times longer than last joint of maxillary palpus (Fig. 183). Head (in frontal view) nearly round, its width only somewhat greater than its height (without mandible; Fig. 184). First tergite quadrate or indistinctly subquadrate, i. e. hardly longer than wide at hind, with faintly diverging sides behind, second tergite conspicuously transverse (Fig. 185). Mesonotum faintly dull, with dense and sharp punctuation, interspaces distinctly smaller than punctures (Fig. 20). Stigma 2–3 times longer than broad, issuing radial vein distinctly distally from its middle, *r1* 1.5–1.6 times longer than *cuq1*, *n. bas.* relatively short, consequently, *d1* unusually oblique (Fig. 186). Hind imaginary tangent to anterior ocelli only touching posterior two ocelli. Inner spur of hind tibia longer than outer one and as long as half basitarsus. Proximal half of third tibia brownish yellow, distal half progressively darkening. ♀: 3.2–3.5 mm, ♂: 3–3.3 mm. — England

A. marica NIXON, 1972 (!)

- 193 (192) Last joint of labial palpus of normal length, at most as long as last joint of maxillary palpus. Head (in frontal view) rather transverse (Figs. 203, 210). First tergite more or less longer than wide at hind (Figs. e.g. 189, 194, 202).
- 194 (195) Two spurs of third tibia unequal, inner spur distinctly longer than half basitarsus, outer spur almost reaching middle of basitarsus (Fig. 187). Head behind eyes (in dorsal view) gradually rounded (Fig. 188). Posterior imaginary tangent to fore ocellus touching (and not transecting) hind two ocelli. Lower furrow of pronotum indistinct. Mesonotum with shallow and discrete punctuation, interspaces smaller than diameter of punctures though posteriorly slightly

Figs. 187–217. — Figs. 187–190. *Apanteles turionellae* NIXON: 187 = third tibia with spurs and basitarsus, 188 = head behind eyes, 189 = tergites 1–2, 190 = stigma and *r1* + *cuq1* of right fore wing. — Figs. 191–193. *A. clavatus* (PROV.): 191 = head behind eyes, 192 = tergites 1–3, 193 = scutellum with postaxille. — Figs. 194–196. *A. homoeosomae* MUES.: 194 = tergites 1–3, 195 = stigma and *r1* + *cuq1* of right fore wing, 196 = *Cu* of right hind wing. — Figs. 197–201. *A. interpolatus* PAPP: 197 = head behind eyes, 198 = scutellum with postaxille, 199 = stigma and *r1* + *cuq1* of right fore wing, 200 = *Cu* of right hind wing, 201 = tergites 1–3. — Figs. 202–205. *A. albipennis* (NEES): 202 = tergites 1–3, 203 = head in front, 204 = distal part of right fore wing, 205 = proximal part of right hind wing. — Figs. 206–208. *A. bersus* PAPP: 206 = tergites 1–2, 207 = nervellus of right hind wing, 208 = stigma and *r1* + *cuq1* of right fore wing. — Figs. 209–214. *A. phaloniae* WILK.: 209 = head behind eyes, 210 = head in front, 211 = nervellus of right hind wing, 212 = distal part of right fore wing, 213 = fore tibia and tarsus, 214 = tergites 1–3. — Figs. 215–217. *A. cacoeciae* RILEY: 215 = fore tibia and tarsus, 216 = *D1* of right fore wing, 217 = tergites 1–2



- increasing in size (Fig. 30). First tergite (Fig. 189) parallel-sided, 1.4 times longer than wide at hind, its horizontal half with faintly raised rugo-rugolosity, subshiny. Hind margin of second tergite sinuate (Fig. 189). Ovipositor sheath as long as third tibia + tarsal joints 1–2, its distal half downcurved and widening. Stigma 2.4 times longer than broad, emitting radial vein distally from its middle. r_1 longer than cu_{cu1} (20 : 15, $\times 100$, Fig. 190). d_1 as long as or indistinctly longer than d_2 . Third tibia brownish yellow, apically black. ♀ : 3.5–3.6 mm, ♂ : 2.8–3.3 mm. — Austria **A. turionellae** NIXON, 1971 (!!)*
- 195 (194) Two spurs of third tibia either subequal or unequal, however, inner spur at most as long as half basitarsus. Head behind eyes (in dorsal view) less gradually rounded (Figs. 197, 209).
- 196 (201)** First tergite 1.4–1.5 times longer than wide at hind, usually with parallel sides (Figs. 192, 194, 201).
- 197 (198) Second tergite (Fig. 192) less transverse, at most thrice broader than its length medially; third tergite at most one-and-a-half times longer than second one (measured medially). Horizontal half of first tergite and entire second tergite rather longitudinally rugulose. Ovipositor sheath as long as third tibia + half basitarsus. Scutellum relatively broad at hind (Fig. 193). Posterior imaginary tangent to fore ocellus touching or indistinctly transecting hind two ocelli, distance between fore and a hind ocelli shorter than diameter of hind ocellus. Preapical two antennal joints 1.2 times longer than broad. Tegulae pale yellow. Legs 1–2, except black coxae, bright yellow, second femur blackish at base. Basal half of third tibia whitish yellow, distal half blackish. Palpi pale. ♀ : 2.8–3 mm, ♂ : 2.5–2.7 mm. — Nearctic Region
- A. clavatus** (PROVANCHER, 1881) (!)
- 198 (197) Second tergite (Figs. 194, 201) more transverse, at least 3.5 times broader than its length medially; third tergite at least 1.8–2 times longer than second one (measured medially). Horizontal half of first tergite with vague punctation, interspaces smooth or almost smooth, second tergite polished. Ovipositor sheath as long as third tibia + tarsal joints 1–2. Scutellum relatively less broad at hind (Fig. 198). Tegulae brown or blackish (brown). Light colour of legs brownish yellow.
- 199 (200) Head (in dorsal view) obviously not so wide as width of thorax between tegulae. Ocelli forming a low triangle, hind imaginary tangent to anterior ocellus distinctly transecting posterior pair. Stigma 2.1 times longer than broad, emitting radial vein hardly distally from its middle (Fig. 195). First flagellar joint twice longer than broad. Inner spur of third tibia slightly longer than one-third basitarsus, i. e. much shorter than half basitarsus. cu of hind wing broad (Fig. 196). First tergite anteriorly slightly widening, otherwise together with tergites 2–3 very similar to that of *A. interpolatus* (Fig. 194). Costal vein yellow. ♀ : 2.5–3 mm, ♂ : 2.5 mm. — U. S. A., Cuba
- A. homoeosomae** MUESEBECK, 1933 (!)**
- 200 (199) Head (in dorsal view) as wide as thorax between tegulae or at most indistinctly narrower. Ocelli forming a relatively high triangle, hind imaginary tangent to anterior ocellus touching or at most faintly transecting posterior pair. Stigma 2.3 times longer than broad, emitting radial vein less distally from its middle

* The specimens named by me as *A. turionellae* NIXON (PAPP 1975) represent another species (sp. n. ?) which I had compared with the type-specimens of my *A. interpolatus* PAPP.

** The species included in couplets 196 (201)–209 (208) are extremely difficult to distinguish.

*** See footnote to couplet 208 (209) of *A. phaloniae* WILK. on p. 296.

(Fig. 199). First flagellar joint 2.3–2.4 times longer than broad. Inner spur of third tibia almost as long as half basitarsus. *Cu* of hind wing long (Fig. 200). First tergite posteriorly slightly widening, otherwise together with tergites 2–3 very similar to that of *A. homoeosomae* (Fig. 201). Costal vein brown. — Hungary

***A. interpolatus* PAPP, 1975 (!)**

201 (196) First tergite at most 1.3 times longer than its greatest width posteriorly, usually with subparallel sides (Figs. 202, 206, 214, 217).

202 (205) Inner margin of eyes obviously, but never strongly, converging towards oral part (Fig. 203). Wings with milky tint. Ovipositor sheath as long as third tibia + basitarsus.

203 (204) Head (in dorsal view) obviously not so wide as thorax between tegulae (Fig. 16, in NIXON 1972: 740). Preapical three joints of antenna transverse to cubic (Fig. 164). Mesonotum with discrete, relatively deep and strong punctation, interspaces polished and minutely increasing in size posteriorly (Fig. 9). *r1+cuq1* distinctly longer than width of stigma (Fig. 165). Nervellus of hind wing more incurved, *Cu* relatively broad (Fig. 167). Prescutellar furrow relatively deep. ♀: 3–3.5 mm, ♂: 3 mm. — England, Hungary, Bulgaria, Mongolia

A. drusilla* NIXON, 1972, (!) nom. rev.

204 (203) Head (in dorsal view) normally as wide as thorax and at most indistinctly or slightly narrower than thorax between tegulae. Preapical three joints of antenna at least a quarter longer than broad, only exceptionally subcubic. Mesonotum with discrete, though relatively less deep and less strong punctation, interspaces faintly dull to subshiny, along notaulic course punctures somewhat crowded (Fig. 1). *r1+cuq1* hardly longer than width of stigma (Fig. 204). Nervellus of hind wing less incurved, *Cu* relatively long (Fig. 205). Prescutellar furrow relatively shallow. ♀: 3–3.3 mm, ♂: 2.5–3 mm. — England, Hungary, Corsica, European USSR, Turkey, Mongolia

A. albipennis* (NEES, 1834)*, sp. rev.*

205 (202) Inner margin of eyes parallel (Fig. 210). Wings subfumous or hyaline. Ovipositor sheath either as long as third tibia + half basitarsus or longer.

206 (207) First tergite very slightly widening posteriorly and somewhat rounded at rear (Fig. 206). Mesonotum relatively with not closely placed punctures, interspaces shiny and slightly but obviously increasing in size posteriorly, notauli indistinct. Nervellus of hind wing arched (Fig. 207). *r1* minutely longer than *cuq1*, meeting each other in an angle (Fig. 208). Inner spur of hind tibia somewhat shorter than half basitarsus. Basal half of third tibia yellow, rest blackish. ♀: 2.8 mm. — Mongolia

***A. bersus* PAPP, 1976b (!)**

207 (206) First tergite not widening posteriorly (Figs. 214, 217). Mesonotum relatively with closely placed punctation, interspaces subshiny to dull and at most indistinctly increasing posteriorly, notauli distinct by more or less crowded punctation (Fig. 17). Nervellus of hind wing faintly arched (Fig. 211). *r1* usually longer than *cuq1* (Fig. 212).

* See footnote on p. 292–293 to couplet 153 (154): “*Previously ... them.”

** Since the end of the last century, *A. albipennis* NEES is considered as a synonym of *A. lacteipennis* CURT. (SHENEFELT 1972). My interpretation of the two species is based on the examination of the “Type” (*A. lacteipennis*) and on authentically identified (det. MARSHALL) specimens (*A. albipennis*), the former housed in the Victoria Museum (Melbourne), the latter deposited in the Hungarian Natural History Museum (Budapest). The distinctness of the two species is obvious and, therefore, I re-establish *A. albipennis* as a specific name. See further comments at the footnote of *A. lacteipennis* CURT., p. 280

- 208 (209) Tarsus of fore leg somewhat longer than tibia, proportional length of tarsal joints 1-4 as 17 : 10 : 8 : 6 ($\times 100$, Fig. 213). *D1* slightly wider than high (48 : 43, $\times 100$, Fig. 212). First tergite throughout parallel-sided (Fig. 214) and rugulose-subrugulose on its hind surface. Ovipositor sheath as long as third tibia + basitarsus. Fore femur on its proximal half dark brown to black. Hind tarsus blackish fumous. ♀ : 3-3.7 mm, ♂ : 2.8-3.2 mm. — England, Finland, Hungary, Rumania (Transylvania), Sardinia, European USSR, Georgia
- A. phaloniae** WILKINSON, 1940 (!)*
- 209 (208) Tarsus of fore leg somewhat shorter than tibia, proportional length of tarsal joints 1-4 as 15 : 8 : 7 : 5 ($\times 100$, Fig. 215). *D1* at most indistinctly wider than high (Fig. 216). First tergite with subparallel sides, behind feebly rounded (Fig. 217), rugose on its hind surface. Ovipositor sheath as long as third tibia + half basitarsus. Fore femur yellow, basally rather faintly dark. Hind tarsus infusate. ♀ : 3-3.5 mm, ♂ : 3-3.2 mm. — U. S. A.
- A. cacoeciae** RILEY, 1881 (!)
- 210 (79) Stigma fully dark, i. e. opaque brown to blackish brown, without any pale basal spot.

(To be continued)

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* *A. homoeosomae* MUES. (Nearctic Region) and *A. phaloniae* WILK. (Palearctic Region) are extremely similar to each other as it was indicated by NIXON (1972) too. Herewith I point out the differences which I consider as specific features, established by the examination of authentically identified female and male specimens (det. MARSH), and paratypes (1 ♀, 1 ♂), respectively:

- A. homoeosomae* MUES.
1. Head (in dorsal view) distinctly not so wide as thorax between tegulae.
 2. First tergite 1.4 times longer than wide at hind (Fig. 194).
 3. Ocelli forming a low triangle, hind imaginary tangent to anterior ocellus distinctly transecting posterior pair. Distance between fore and a hind ocelli visibly shorter than diameter of one hind ocellus.
 2. Inner spur of hind tibia shorter than half basitarsus.

- A. phaloniae* WILK.
1. Head at most indistinctly not so wide as thorax between tegulae.
 2. First tergite 1.2-1.25 times longer than wide at hind (Fig. 214).
 3. Ocelli forming a relatively high triangle, hind imaginary tangent to anterior ocellus touching (or at most indistinctly transecting) posterior pair. Distance between fore and a hind ocelli as long as diameter of one hind ocellus.
 4. Inner spur of hind tibia as long as half basitarsus.

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